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Distribution of teacher attention in the preschool classroom : the effects of child sex and child behavior.

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DISTRIBUTION OF TEACHER ATTENTION IN THE PRESCHOOL CLASSROOM: THE EFFECTS OF CHILD SEX AND CHILD BEHAVIOR

A Dissertation Presented

By

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ABSTRACT

The purpose of the study was to investigate factors which were likely to affect the amount and type of teacher attention preschool children received. It was hypothesized that teachers would respond differentially to children according to the type of behavior displayed by the child and according to whether the child was a male or a female.

Teachers and children in six schools were videotaped during normal classroom activities. Written records were obtained simultaneously to indicate what activity each child was engaged in and whether or not he or she was near a teacher. Written records provided information on children's activities when they were not being recorded on videotape. In addition, teachers were asked to fill out a questionnaire indicating which children they enjoyed the most, which they would like to remove from the class, and which were lease noticed. Also, activity preferences were determined.

Videotape records were transcribed and coded into teacher-child interactions. Data was summarized for each child indicating the number of interactions of each type that that child engaged in per hour of recorded tape. Analyses were conducted comparing males and females in eight areas. These included: 1) the amount of time spent in the vicinity of the teacher, 2) activity preferences, 3) rate of misbehavior, 4) rate of teacher initiations of different

types, 5) rate of child initiations of different types, 6) type of teacher response received, 7) children who receive high rates of teacher attention, 8) attitude groups based on teacher's questionnaire selections.

Results indicated that females were present in the vicinity of teachers more often than were males. This effect was in part attributed to activity preferences. However, when males were in the vicinity of the teacher, they were found to receive teacher attention at higher rates than did females. This effect might be related to higher rates of misbehavior observed in males. Males were found to receive more competence encouragement than females, while females sought and received more help from teachers. Further analyses indicated that high attention receivers tended to be misbehaving males. Children selected as most enjoyable by teachers on the questionnaire consisted of more females than males and showed moderation in behavior. These children were corrected less often when misbehaving and received more offers of help than did other children. Children teachers indicated rejection toward on the questionnaire were those who showed high rates of misbehavior and did not conform to accepted sex-role stereotypes. This group was composed of mostly males. Children in the rejection group received more teacher initiations when cooperating than did other children. Children labeled as least noticed showed patterns of inactivity, initiating few conversations and having low

rates of misbehavior. These children received fewer teacher initiations when cooperating than did other children.

In summary, teachers appear to be influenced by both the necessity to maintain order in the classroom and by sex-role stereotypes. Guidelines were suggested for future research.

INTRODUCTION

The present study grew out of research and theory in the area of sex-role development. It has become apparent that some of the sex-role expectations held by our culture limit the opportunity for both males and females to reach their full potentials for personal growth. Adherence to the male sex-role stereotype requires aggressiveness and independence, while emotional expression is suppressed (Kagan, 1964). These traits facilitate competitive and intellectual behavior, but limit the interpersonal nurturant aspects of the personality. Moreover, according to one author (MacKinnon, 1962) emotional suppression may result in less creative and original work. Women, in contrast, are expected to be unaggressive, passive, nurturant, attractive, and oriented toward others (Kagan, 1964). These characteristics are compatible with motherhood and domestic life, but provide little encouragement for independent intellectual thought. Passivity and dependence have been found to be negatively related to intellectual growth in girls (Kagan & Moss, 1962) and conformity and reliance on the opinions of others are associated with poor problem solving skills (Macoby, 1966).

In addition to the societal loss of creative and intellectual resources which results from conformity to these stereotypes, individuals may experience dissatisfaction and lack of fulfillment. Brenton (1966) links

lack of emotional expression in men with eventual alienation from the family, and feminist authors draw attention to feelings of alienation which can develop in women restricted to the role of wife and mother.

While this research should not be taken to imply that all sex-role behavior has negative consequences, it does suggest the importance of examining the development of sex-role behaviors. It is possible that a greater understanding of factors which influence early sex-role behaviors will lead to a change in the conditions which limit flexibility in this way, and enable individuals to lead fuller, less restricted, lives.

The present study focuses on behavior related to sex-role learning at the preschool (3-5 years) age. Generally, by three years of age the child has become aware of his or her sexual identity, has acquired a rich use of language and is able to form social relationships with peers. The years following are particularly important as the child expands his or her concept of self in relation to others, learning which behaviors are effective in gaining resources and approval and which are not. During these years children are encouraged to behave in ways considered appropriate for their age, sex, and the setting they are in.

The preschool classroom is an important setting that many children of this age are exposed to. For children who attend preschool, it is usually their first extensive

experience outside of the home and their first exposure to the educational system. While attending a preschool, the child comes into contact with values held by the wider culture and gains an introduction to what is considered school-appropriate behavior. Thus, the preschool provides a bridge between the free play situation available at home and the limits and structure of the public school environment.

The preschool provides a fairly well defined setting where teacher and child behavior can be reliably observed. Beginning in the 1930's observers have focused on children in this setting obtaining some of the first reliable observations of social behavior, and activity preferences recorded at this age level (Brackett, 1934; Dawe, 1934; Hattwick, 1937). Studies conducted during this period were generally descriptive in nature and did not often attempt to establish cause and effect relationships. In later years (during the 1950's and 1960's) research about young children became concerned with the causal nature of events and with the limits of children's abilities. Studies were most often conducted in a laboratory setting where conditions could be carefully controlled and responses accurately measured. Although much valuable knowledge has been gained from laboratory research, the task of applying this knowledge to the study of behavior as it occurs naturally has only recently been attempted. The complex-

ity of behavior in its natural setting is enormous, particularly when social interactions are being recorded. Whereas previous research in the preschool setting has been descriptive or has been narrowly focused on particular categories of behavior (e.g. positive reinforcement), the present study was designed to gain a broader, more comprehensive view of teacher and child behaviors associated with sex-role learning in the preschool.

A number of studies conducted in preschool classrooms have reported that teacher attention is not evenly distributed between the sexes. In general, the evidence suggests that boys receive more of both praise and criticism, although some conflicting results have been reported. It is difficult to resolve such conflicts or draw conclusions from this research because little attempt has been made to identify factors which might contribute to an unequal distribution of teacher attention. If consistent effects are present they could be due to sex differences in child behavior or could be the result of teachers' sex-role attitudes. No information is available which indicates the amount of variance which each of these factors account for. Little is known about the effect that classroom activity or situation has on the distribution of teacher attention or about the distribution of other types of teacher attention besides praise and criticism. The present study is designed to provide further information on these questions.

REVIEW OF THE LITERATURE

A number of explanations have been offered regarding the origin and development of sex-role patterns. These theories vary along a continuum from largely biological explanations to theories which consider socialization experiences as the primary determinant of sex-role behavior. The biological point of view suggests that sex differences in cognitive abilities and personality traits seen in adults result from physiological and anatomical differences present at birth. This position has been held for centuries and still receives some support. A recent example is found in the work of Broverman, Klaiber, Kobayash & Vogel (1968) which attributes female superiority in such perceptual motor tasks as typing and male superiority in problem solving tasks to hormonal differences which differentially affect neural inhibitory processes.

However, much evidence suggests that while genital and hormonal sex differences influence behavior, they are not the major determinant of most sex-role behaviors. The importance of socialization experiences is indicated by anthropological research. In a study of three New Guinea tribes Mead (1935) found one tribe where both men and women showed cooperative, non-aggressive, maternal behavior, which would be considered feminine in our society. Both sexes of a second tribe were ruthless, aggressive and violent, behavior considered masculine in our culture.

A third tribe showed a reversal of our sex-role pattern. Men were dependent and emotional while women were impersonal, dominant, and managerial. More recently in a study of children 3 to 11 years old in six cultures, Whiting and Edwards (1973) found that sex differences in behavior could be almost entirely accounted for by the type of tasks children were assigned. Children assigned tasks which kept them in the home such as cooking and child care showed more behavior appropriate to the female stereotype (e.g., helping, responsibility and social skills). In performing those tasks the child was probably in close proximity with a female adult role model. Children assigned tasks that took them outside the home (e.g., gardening, animal husbandry) showed more male appropriate behavior such as aggressiveness and rough and tumble play. These studies suggest that sex-role patterns are highly malleable and vary considerably according to cultural expectations.

Several studies have followed the development of hermaphroditic individuals who possessed the hormonal patterns and internal organs of one sex, but were assigned to the opposite sex at birth due to abnormal external genitalia (Hampson, 1965; Money & Ehrhardt, 1972). In most instances these people successfully adjusted to the assigned sex-role, although their biological apparatus was that of the opposite sex. Hampson (1965) reports that in some individuals the error was discovered early in life

and a change was made to the appropriate gender role-identity. Individuals who had had little sex-role experience prior to the time of change (i.e., were 2 years of age or less) adjusted well to the new sex-assignment and showed normal psycho-sexual adjustment. But, sex assignments made after age two resulted in progressively poorer adjustment.

After more than 20 years of research in this area, Money has put forth a view of sex-role development which attempts to integrate the biological with the social determinants of gender identity (Money & Tucker, 1974). According to these authors research suggests a biological predisposition toward some sex linked behaviors. Both sexes have the capacity to perform certain behaviors but one sex may do so more readily while the other sex requires more of a push to do so. For example, there is evidence that female Rhesus monkeys are more ready to assume a parenting role, but once males get past their initial reticence they perform as adequately as the remales. Cultural expectations can build on such predispositions or can neutralize or reverse them. Money & Tucker suggest that all but the most basic biological attributes (i.e., ability to pregnate, menstruate, give birth, and lactate) can be altered. However, after years of sex-role learning basic patterns of behavior cannot be easily reversed.

In societies such as ours where sex differences are emphasized, individuals reaching adulthood may have lost

the opportunity to fully develop certain abilities, although large changes in behavior or learning can still occur.

An exhaustive review of the literature on sex differences has recently been published by Maccoby and Jacklin (1975). These authors conclude that there is evidence for biological differences favoring greater aggressiveness in males and superiority in some cognitive skills (e.g., visual-spatial abilities) and female superiority in verbal skills. However, Maccoby and Jacklin point out that these differences do not suggest exclusion of one sex or the other from certain vocations or roles in life but rather that more effort be directed toward providing additional learning in areas of weakness (e.g., remedial reading classes made available to boys, who tend to have more difficulty in this area).

Theories of Sex-Role Learning

Several theories have been offered to explain the basic mechanisms which underlie sex-role learning. Of current influence are explanations offered by Freudian theory, social learning theory and Kohlberg's cognitive-developmental theory. Although each of these theories has its limitations, each has something to offer in terms of understanding sex-role development.

Freud views sex-role development as a series of psychosexual stages that each child goes through (Bronfenbrenner,

1960). The initial stage is characterized by the child's intense dependency on the mother or primary caretaker. Fear of maternal loss resulting from the mother's gradual withdrawal causes the child to recreate her presence through imitation and fantasy. This process is referred to as anaclitic identification. A second type of identification occurs during the phallic stage. By four to five years of age the child has become aware of sex differences in external genetalia. The boy undergoes the Oedipal conflict, experiencing sexual desire for his mother and fearing castration from his father as retribution. The boy identifies with the father in order to reduce the fear (identification with the aggressor). The girl, according to Freud, notices her lack of male genitals and experiences penis envy. She is then desirous of the father who possesses this valued organ. As she comes to realize that her desires for the father cannot be fulfilled, she identifies with the mother.

Freud's biological emphasis on the importance of anatomy in sex-role development (i.e., presence or absence of the penis) has received considerable criticism. Sherman (1971) reviews the evidence on this subject and concludes that while the Oedipal conflict may be a factor in the sex-role development of boys there is practically no indication of penis envy as an influential factor in the identification of girls. The value of Freudian theory is that it attributes sexual awareness to children and emphasizes the

importance of the parent-child relationship in motivating the child to want to be like the parent. In addition, it has had a major influence on the development of other sex-role theories.

Social learning theory is the application of stimulus-response theory to personality formation. It explains the acquisition of behavior in terms of the consequences which follow it. Behavior which is itself reinforced or which the child observes another person being reinforced for, is repeated. Behavior which is not reinforced is eliminated. Ample evidence exists which documents differential reinforcement according to sex of child. Even before an infant is a year old, parents react to it in significantly different ways according to its sex. For example, mothers are more responsive to three-month-old girls exhibiting affective behavior (i.e., crying and smiling) than to boys showing this behavior (Lewis, 1973). Boys, however, receive more attention for activity and movement than do girls. Later in infancy proximal behavior is permitted and rewarded in girls, while boys are pushed toward greater independence (Lewis, in press). Laboratory research has demonstrated that children learn many behaviors through observation, but tend to perform and practice only those behaviors which receive reinforcement from persons in power (Bandura & Walters, 1963). Thus, both boys and girls would possess the knowhow to play with trucks but boys would be expected

to perform this behavior more often because they are more frequently reinforced for it. Social learning theory argues that experiences such as these are the major determinant of sex-typing (Mischel, 1966).

Social learning theory offers a valuable tool for understanding the acquisition of many sex-role behaviors, but biological differences and intrapsychic aspects of sex-role acquisition are largely ignored. In a critique of social learning theory Bowers (1973) points out that it attempts to predict all behavior on the basis of situational reinforcers and does not recognize the resistance to change of many behaviors or the importance of cognitive, affective and motivational states. The child is passively shaped into behaving like a boy or a girl. No attempt is made to explain how various behaviors are integrated or what the subjective experience of sex-typing might be for the child. In addition, this approach has been highly dependent upon laboratory research and has neglected the importance of naturalistic observation and case study.

In contrast, Kohlberg's cognitive-developmental theory attempts to explain sex-role learning largely on the basis of cognition while ignoring the effects of external reinforcement contingencies. According to this theory the egocentricity of children's thought causes them to view themselves, and objects or activities with which they identify, in a positive light (Kohlberg, 1966). Thus, when the child

learns his or her sex, these activities become preferred and the child is motivated to engage in them. Environmental variables and sex-role appropriate behaviors help form the child's developing sex-role identity by indicating what behaviors are expected from each sex.

While social learning theory views the child as passively shaped by the environment, Kohlberg describes the child as competent and actively reaching out to acquire those behaviors which are appropriate. Kohlberg's theory is largely based on the fact that the child's mental age (i.e., cognitive development) is a better predictor of sex-role development than are environmental factors such as parental nurturance. However, certainly not all behaviors considered appropriate for either sex are adopted by every child of that sex. Thus, other factors must be operating in addition to the child's desire to behave in a sex-role appropriate manner. In general, Kohlberg's work points out an important dimension in sex-role learning, but tends to under emphasize the other important influences on sex-role development.

It has been suggested by Rosenberg and Sutton-Smith (1972) that each of these sex-role theories may be most applicable at particular developmental stages and in explaining specific kinds of data. Freudian theory is seen as most relevant to the emotional and motivational aspects of sex-role development which originate in the

family. Similarly, Kohlberg focuses on the first years of life when a stable sexual identity is being formed and the child is first learning what type of behavior is appropriate for his or her sex. Social learning theory is considered most appropriate in describing observational learning and learning through reinforcement of sex-typed behavior during later childhood.

Sex-role Learning in the School

Differences in school environments have been associated with differences in sex-role behavior. Minuchin (1965) compared fourth grade boys and girls from two traditional schools with children from two modern schools. The children were carefully matched on SES, age, and type of home background. The modern schools were characterized as stressing intellectual exploration, emphasis on the individual, flexibility and open conceptions of sex-appropriate roles and behavior. The traditional schools stressed the socialization of children through established methods, emphasized the mastery of a definite established body of facts, inflexible authority role for adults, and fixed conceptions of sex-appropriate roles and behavior. Both home values and school environment were important. Minuchin found that children attending the modern schools (especially females from modern home backgrounds) were less rigidly sex-typed on a variety of measures such as preference for

stereotyped sex-roles (athletics for males, attractiveness for females) and sex-typing in fantasy than were children attending the traditional schools. Since the teacher structures the classroom environment and is responsible for directing children's behavior, it is likely that teacher behavior was an important factor contributing to the school effects.

Thus, it is not surprising that studies seeking to explore sex-role learning in the preschool environment have focused on teacher behavior. Social learning theory has been relevant in this context, as most studies have attempted to measure teacher behaviors thought to be reinforcing to the child. Social learning theory would predict that if teachers reinforce males and females for different types of behavior, the two sexes will eventually learn to behave differently. Similarly, if teachers provide males and females with different learning opportunities, the two sexes will gradually learn to excel at different skills.

However, social learning principles, based on laboratory research, are more difficult to apply appropriately in a naturalistic setting. Studies have most often narrowly defined reinforcement and failed to take other important variables into account. Positive reinforcement has usually been defined as verbal praise and negative reinforcement as verbal criticism, while other potentially reinforcing events such as attending to the child, physical contact, verbal

initiation, etc., have rarely been measured. Furthermore, in the studies to be reviewed, the importance of recording behavioral interaction between teacher and child has often been ignored. The child's preceding behavior and the type of teacher response which follows must be clearly specified in order to draw any conclusions about the effect teacher-child interaction might have on sex-role learning. For example, it is possible for males and females to receive equivalent amounts of praise and criticism but still differ with respect to the specific behaviors approved or disapproved. If females received approval for dependent behavior and disapproval for aggressive behavior, while dependent behavior was criticized in males and aggressive behavior approved, different learning would clearly take place. According to social learning theory females would learn to act dependently and males aggressively.

Most previous studies have assumed that the more reinforcement the child receives the better off he or she is without examining what type of behavior is reinforced. However, Smith (1972) argues that if reinforcement is given largely for getting the right answer or for conformity behavior rather than exploration or original thinking, it may prevent children from developing their own intrinsic motivation for succeeding. In addition, teacher behavior is certainly influenced by child behavior. While some studies have recorded sex differences in child behavior

and used this data as a baseline to make statements about teacher responsiveness, none have recorded actual behavioral interactions (i.e., the child's behavior followed by the teacher's response, if any). The present study was designed to fill this gap.

Several studies have investigated teacher behavior in preschool classrooms according to sex of child. In one study, Fagot & Patterson (1969) observed classes of three-year-olds in two nursery schools during 24 70-minute sessions. The data were analyzed first to determine whether some activities were more preferred by one sex than by the other and secondly, to see if teachers differentially reinforced sex preferred activities. Teacher reinforcement was found to occur much more frequently with both sexes when they were engaged in female preferred activities rather than male preferred activities. But since there was no difference in over-all amount of reinforcement received (data pooled) it is possible that males received more reinforcement during neutral activities.

The results of this study are not easily interpreted. The authors conclude that teachers give more reinforcement to children participating in female preferred activities. They suggest that the female teachers reinforce behavior high in their own repetoire and consequently attend more to female preferred activities than male preferred activities. However, a more plausible hypothesis

is that females, being more interpersonally oriented (Hutt, 1972), prefer activities during which the teacher is available and avoid activities which have little opportunity for teacher contact. For boys, teacher availability is likely to be a less important factor in choice of activities. A second problem in the Fagot and Patterson study is that reinforcement is defined as a broad category which refers largely to verbal praise. No indication is given of the quantity, quality or category of behavior for which the child is praised. Females may be praised for sitting still quietly, while males might receive praise for successfully completing projects. In addition, many other types of teacher responses are likely to be important. Behaviors such as physical contact with children (e.g., hugging, touching, etc.), instructional contact, helping, etc., were not recorded in this study. Finally, no record was made of child behavior. Teacher behavior is no doubt highly influenced by child behavior and consistent sex differences in children's behavior may be more pronounced during particular activities. For example, teachers may praise only quiet behavior, which is likely to occur more often in doll play than in truck and tractor play.

A second study with preschool children suffers from many of these same difficulties. Biber, Miller and Dyer (1972) studied four 10-minute video-tapes for each of 14 headstart classrooms. Results showed that females received

more instructional contact in 10 our of the 14 classes while there was no difference in the remaining four classes. Females received more positive reinforcement than did males in half of the classes but the amount of reinforcement per instructional contact did not differ between the sexes. Again, reinforcement is broadly defined as verbal praise, differences in children's behavior are not recorded or analyzed and the sample in this study was quite small.

Two studies have been conducted in which children's behavior has been taken into account. Meyer and Lindstrom (1969) investigated the distribution of teacher approval and disapproval in 13 headstart classrooms. The observations occurred over a three-month time span and averaged 11.4 hours per class. Observers gathered information on teacher behavior, context or situation, and child behavior. Teacher behavior was coded whenever the teacher verbally approved of a child's behavior (praise) or verbally disapproved (blame). The context in which the behavior had occurred was coded into one of nine categories and children's behavior was coded as either praiseworthy (e.g., giving correct answer, following directions, being polite, cleaning up, etc.) or blameworthy (e.g., aggressive behavior not following rules, spilling or messing, etc.).

Few sex differences were found. Sex differences did not appear in the amount of praiseworthy or blameworthy behavior children exhibited. In a pooled over-all analy-

sis there were no significant differences in distribution of teacher approval and disapproval according to sex. When the behavior of each teacher was analyzed separately only two head teachers and one aide behaved differently according to sex of the child. In two of these instances boys received more disapproval than girls and in one instance they received more approval. The authors note that the percentage of approval and disapproval statements contingent upon the child's behavior was surprisingly low. In most classes fewer than 50% of the disapproval statements were associated with blameworthy behaviors and 30% of the approval statements were associated with praiseworthy behaviors.

A second study which investigated the distribution of teacher approval according to both sex and behavior of the child was conducted by Serbin (1972). In a survey of 15 classrooms over a three-week period she found that males received more of almost every category of teacher behavior, both positive and negative. Correcting for the effects of differential behavior on the part of males and females by dividing the number of teacher responses by the number of behaviors emitted by males and females she found that teachers responded at a higher rate per child behavior to males no matter what they did. Males were significantly more likely to obtain a response from the teacher for participating, solicitation (asking for help) and aggres-

sion. Not significant but in the same direction, males received responses at a higher rate for ignoring and destruction. The only response for which females were more likely to receive a teacher's response was proximity, and this effect was not significant. The type of response teachers gave also differed according to sex of child. Males received significantly more loud reprimands, restraints, and brief conversation. There was a tendency for females to receive slightly more help in the form of the teacher performing a task for them rather than showing females how to do it themselves.

Serbin argues that teachers respond to children differentially according to sex, even after children's behavior has been taken into account. However, the behavior categories used in the Serbin study are broad and children's behavior within a category may vary according to sex. For example, solicitation behavior in females may differ in important ways from solicitation behavior in males and teachers may be responding to a particular type of solicitation rather than to the sex of the child. Furthermore, Serbin's results are based on the average rate of teacher response to all children of one sex. Extreme behavior on the part of one or two individuals could greatly inflate the teacher's response rate for that sex. Martin (1972) compared teacher-child interactions for males and females rated by the teacher as

behavior problems or non-behavior problems. He found that males who were behavior problems received more teacher contacts than any of the other groups. Interestingly enough, females who were behavior problems received fewer contacts of almost every kind. However, no description was given of the behaviors which preceded teacher contacts and there may have been important differences in this area. A recent study by Smith and Green (1975) found that teachers intervened 39% of the time when preschool boys were involved in aggressive encounters with other boys but only 25% of the time when girls behaved aggressively with other girls. These differences were not statistically significant, but do suggest a trend in the same direction as the results reported by Marton (1972).

It is not clear from the research reviewed whether or not there are any over-all differences in distribution of preschool teachers' attention according to sex of child. Results are conflicting, with one author concluding that males receive more of almost all types of teacher attention (Serbin, 1972), others finding that females receive more of at least verbal praise (Biber, Miller & Dyer, 1972; Fagot & Patterson, 1969) and still others finding no evidence of any sex differences at all (Meyer & Lindstrom, 1969).

Differences in results, however, may be due to differences in perspective, methodology and sample. Differences in these areas are summarized in Table 1. In some

studies conclusions were based on group averages and children were only observed when near the teacher (Biber, Miller & Dyer, 1972; Serbin, 1972), while other researchers focused on individual children (Fagot & Patterson, 1969; Meyer & Lindstrom, 1967). Most studies did not take into consideration possible sex differences in time spent near the teacher or adequately measure the effects of sex differences in child behavior.

Insert Table 1 about here

Thus, a major purpose of the present study is to provide a comprehensive view of teacher-child interactions specifying in detail both the child's behavior and the type of teacher response observed. In addition to focusing on the individual child and documenting the types of teacher-child interactions which occur, the present study will also attempt to analyze two sources of influence which affect the way teachers respond to children. These are differences in children's behavior and teacher's behavior toward children according to sex.

Numerous sex differences in children's behavior are present at the preschool age. As pointed out earlier, males are found to be more aggressive, independent negativistic, and noisier, while females are more adept at language usage, more responsive to social cues and more imitative (Smith, 1972). Teacher-child interactions are likely to be

TABLE 1

Preschool Studies of Teacher Behavior According to Sex of Child

Study	Sample	Method	Behaviors Recorded	Results
Serbin (1972)	15 White middle-class pre-schools	focused on teacher and children near her. Data based on group averages	Child: ignoring, destruction, aggression, crying, proximity, solicitation, participation Teacher: reprimand, praise, hugging, conversation, direction	where sex differences were found, males received teacher responses at higher rates
Biber, Miller & Dyer (1972)	14 head-start pre-schools	focused on teacher and children near her. Data based on group averages	Child: -- Teacher: instructional contact, positive reinforcement for instruction	females received these responses at higher rates
Meyer & Lindstrom (1969)	13 head-start pre-schools	focused on child includes time near and away from teacher. Data pooled for each sex.	Child: praiseworthy behavior, blameworthy behavior Teacher: praise, blame	no sex differences found

Study	Sample	Method	Behaviors Recorded	Results
Fagot & Patterson, (1969)	two white middle-class preschools	focused on child includes time near and away from teacher. Data pooled for each sex	Child: activity choice Teacher: verbal reinforcement	Both sexes received more reinforcement during female-preferred activities and females received more than males
Smith & Green, (1975)	5 nursery schools, 5 day nurseries and 5 play groups in England	focused on children as a group (teacher near some). Data based on group averages	Child: aggressive behavior toward a peer Teacher: intervention	teacher tended to intervene more with boy-boy and boy-girl aggression than in girl-girl, but not statistically significant

influenced by such sex differences in children's behavior. In a summary of several studies, Brophy and Good (1974) conclude that most teachers are reactive rather than pro-active. That is, teachers respond to the child's present behavior rather than adopt a strategy to teach the child new behaviors. The Serbin (1972) results show that teachers are much more responsive to some behaviors than to others. High responsive behavior included behaviors more frequently performed by males such as aggression, ignoring and destruction. Behaviors receiving lower rates of teacher response were proximity and participation which were more typical of preschool females.

The second factor likely to influence teacher-child interactions is the teacher's behavior toward the child, based on sex-role expectations. Evidence suggests that the appropriateness of a child's behavior to sex-role expectations will influence teacher behavior. Yarrow, Waxler and Scott (1971) conducted a study in which two adult females were instructed to act either nurturantly to all children or rejecting to all children. Observation of adult and child behavior under these conditions revealed that dependent child behavior was responded to more frequently than other types of child behavior. An interaction between type of adult attention and sex of child occurred. Dependent behavior in males was more frequently followed by negative adult attention. The authors concluded that since

dependent behavior is congruent with the female sex-role, it is reinforced in females and discouraged in males. Other studies also support this hypothesis. When teachers are given profiles of hypothetical children and asked to indicate which type of child they like the most, they consistently prefer dependent females over dependent males and assertive independent males are preferred over assertive independent females (Levitan & Chananie, 1971; Feshbach, 1971; Good & Grouws, 1972; Helton, 1972).

Research on the behavioral expression of teacher's attitudes indicates that teacher attitudes are significantly related to patterns of teacher-child interaction and are influenced by child sex and behavior. Silberman (1969) conducted a study in which third grade teachers were asked to indicate three children they most enjoyed, three they would like to have removed from the classroom, three they would be least prepared to talk about (least noticed), and three whom they would be willing to give extra instruction to. Silberman labeled these children as the attachment group, the rejection group, the indifference group and the concern group, respectively. Classroom observations of interactions between teachers and children in these categories were then made. The results indicated that the attachment group received more praise and teachers more frequently fulfilled requests made by these children. The concern group received teacher contacts the most frequently

and these consisted of both positive and negative contacts. Children toward whom the teacher felt indifferent received the least amount of contact and the least amount of positive evaluation. The rejection group received both positive and negative contacts and received more negative contacts than did children of other categories.

Although no sex differences were reported by Silberman (1969) other research has reported interesting sex differences in group composition and behavior patterns. Good and Brophy (1972) observing first grade classrooms found significantly more males in the rejection category. This group of children consisted of low achievers who provoked many teacher contacts, consisting of behavior correction. The attachment group, in contrast, was composed of high achieving, conforming children of both sexes who initiated frequent contacts with the teacher. The indifferent group included male and female middle achievers who were passive and initiated few teacher contacts. Concern children tended to be low achieving females who received many teacher contacts related to instruction.

These results suggest first that conformity behavior is reinforced in both sexes and non-conformity behavior is punished in both sexes, and second that more males are non-conforming while more females conform. Although, in the Good and Brophy study, sex differences are evident in the amount and kind of teacher contact received, these effects

cannot be separated from differences in child behavior. No comparisons were made to determine whether teachers responded at a different rate or in a different way to males and females exhibiting the same behavior. The present study, using three of the categories described by Silberman (attachment, rejection, indifference), will attempt to determine whether such differences exist. For example, high attachment females may be more passive than high attachment males and teachers may respond to this behavior at a higher rate when performed by females than when performed by males.

In summary, studies on teacher attitude and behavior indicate that teacher attitude is affected by child behavior, teacher attitude is related to teacher behavior patterns, and questionnaire information suggests that sex of child influences teacher attitude even after differences in child behavior are taken into account.

METHOD

Subjects

Six preschool classes located in western Massachusetts were observed over a six-month period. The total sample was composed of 56 girls and 66 boys. There were one male and 14 female preschool teachers. A brief description of each school follows.

School A. School A was a large preschool located near a University. Four preschool classes were conducted at this school which was housed in a large two-story building. The classes were separated by age into three-year-olds and four-year-olds, with one class at each age level held in the morning and one at each level held in the afternoon. The orientation of the school was toward education and planned instructional activities were offered part of every day. However, there was also considerable opportunity for choice of activities and free play. The daily routine followed a fixed time schedule. First there was a free choice period where the child could choose between a variety of activities and teachers with educational materials were available in certain areas. Following the free choice period was group time, snack time, another free choice period, and then outside play.

The class observed was the morning four-year-olds. There were 19 females and 18 males in this class, ranging in

age from four years old to six years old. These children were predominantly white-middle-class and many were children of University faculty and students. Four teachers were responsible for the class, three females and one male. All teachers had received a bachelors degree and were in the process of obtaining further graduate training. Descriptively, all four teachers in the school appeared warm and interested in children. They allowed much freedom and children had lots of materials and activities to choose from. Cross sex activity choices were tolerated and sometimes encouraged.

School B. School B was a small rurally located school. The class was held in a building belonging to a church although the school was not church affiliated. The orientation of the school was largely unstructured free play. The daily routine was flexible and usually consisted of a free play period (on some days during this period a teacher provided an educational activity which children could choose), snack time, group time, and outside play.

The class consisted of six females and 11 males ranging in age from three years to five years. The children were predominantly from rural, lower-middle-class, and working-class families and not all of the children came every day. Two female teachers supervised the class. One teacher was a graduate student in education and the other teacher had taken some college courses, but no special training in teaching. Impressionistically, this school was often

chaotic. Children were often active and noisy and frequently seemed out of control. Little formal instruction was attempted and children were often engaged in fantasy play. Teachers tried to encourage children to participate in opposite sex activities but were over-solicitous or intellectual and rarely modeled cross sex behaviors.

School C. School C was located in a small town. The class was held in the downstairs area of a three-story house. The orientation of the school was generally unstructured free play with occasional special activities. The daily routine was flexible, usually consisting of a free play period, followed by snack, group time, another free play period, and outdoor play. There was some restriction of activity choice depending on the number of children already engaged in a particular area.

The class was composed of 12 females and 11 males, ranging in age from three years of age to five years of age. The children were generally of middle-class background and not all children came every day. Three female teachers supervised the children. One teacher was a state licensed teacher who had previously taught in the public schools. Both of the remaining two teachers had taken some college courses and one had several years of prior experience as a preschool teacher. Teachers in this school did not seem very interested in the children and often spent much time chatting with each other. School rules were cited frequently

but inconsistently enforced.

School D. School D was located in a University town. The class was held in the downstairs area of a two-story house and a large outdoor yard. The orientation of the school was of planned activities and outdoor play. Discipline was strongly emphasized and numerous school rules were continuously cited. The daily routine varied considerably from day to day but usually consisted of a period outdoors, one or more planned activities which children could choose to participate in, snack, rest, and a period indoors where there was a choice of free play or a planned activity.

There were five females and 10 males in the class varying in age from three years to five and one-half years. The children were middle-class, and many parents were students or University employees. Two female teachers were responsible for the class. One had had experience in conducting a preschool for more than 25 years while the other was a high school student, without prior experience. The head teacher of this school was an older woman who was very authoritarian. She constantly gave directions and scolded the children. Although she seemed to really like the children, this feeling did not appear to get conveyed to them and they seemed afraid of her. The teacher's aide was inexperienced and usually very quiet, but interacted with the children during art activities. Most activities were conducted out-of-doors, weather permitting.

School E. School E was located in a small town. The school was affiliated with a Unitarian church and the class was held in a church building. The orientation of the school combined structured activity with free play. The daily routine began with a period of free play. During this period, a structured activity was also offered and each child was expected to complete the activity sometime during the period (e.g., complete a painting). Following this period was snack, group, and either outdoor play or a structured activity that the entire class participated in (e.g., making puppets).

There were eight females and 11 males in the class, ranging in age from four years to five and one-half years. The children were largely from middle-class, non-university homes. Two female teachers conducted the class. Both teachers were college educated and had had several years prior experience teaching in the preschool. Descriptively, this school was fairly traditional. Both teachers were middle-aged women who conveyed warmth. One teacher was concerned with maintaining order, while the other was permissive. There were long periods where all children were expected to work quietly on art projects. Cross sex behavior was not encouraged and appropriate sex-role behavior received praise.

School F. School F was a small school located in a suburban area. The class was conducted in the renovated

basement of a private home. The orientation of the school was geared heavily toward learning and achievement. The daily routine varied but usually consisted of a period of free play during which each child was expected to spend approximately one-half hour in individualized reading instruction, and was encouraged to spend time in other instructional activities. Following this period was snack, group time, and either outdoor play or a special activity such as a field trip or puppet show.

The class consisted of six females and five males ranging in age from four and one-half years to five years. Children were generally from middle-class and working-class families. Two males in this class were not included in the study. These identical twin boys both showed signs of autistic behavior and were unable to participate in many of the activities that the other children were involved in. A junior high school girl was assigned as a special aide to supervise these two children.

Two female teachers conducted the class. One teacher had had training as a school teacher and many years experience operating a preschool. The second teacher had some college background and had worked in the preschool for several years. Both teachers were middle-aged women more concerned with achievement and order than with feelings. Competence was strongly encouraged in both sexes and many varied experiences were offered.

Design Rationale

In conducting a naturalistic study, the observational methodology must include an adequate sample of the behavior under investigation. The major purpose of the present study was to obtain data on teacher-child interactions in a natural preschool setting. It was important to record child behaviors which did not elicit a teacher response as well as behaviors which did elicit a response. Males and females may emit a given behavior at equal rates, but teacher response rates may differ according to sex of child. Knowledge of circumstances where teacher attention is withheld makes it possible to determine whether differential teacher response rates are a function of differences in children's behavior or whether sex of child is an important determinant.

A second factor to be taken into account in the present study was category of activity occurring during the observation period. Fagot and Patterson (1969) found that females received more reinforcement than males during female preferred activities, while the reverse was true during male preferred activities. Also, Serbin (1972) reports that while males generally received teacher attention at a higher rate than did females, this was not the case during domestic play (female appropriate) activities when females received higher rates of teacher attention. This evidence suggests that teachers may attend more to children who are engaged in sex

appropriate activities. Thus, in the present study children were observed during a variety of activities and situations.

A third consideration in the design of the present study was the number of preschool classrooms to be observed. Observations must be conducted in enough classrooms to obtain results generalizable to a larger population. Since preschools may differ widely in methods and philosophies, data obtained from too small a sample may reflect school idiosyncracies rather than more general patterns of behavior. In summary, it was necessary to devise an observational system whereby children in a number of classrooms could be observed during a variety of activities, both when interacting and when not interacting with the teacher.

Several different observational approaches were considered. These included observing the teacher and all interactions she participated in, observing individual children both when interacting with the teacher and when not interacting with the teacher, observing the teacher and a subset of children, and observing the teacher and the entire class.

The first of these alternatives, following the teacher, has the advantage of providing a large quantity of data on teacher-child interactions. However, this method alone would not provide information on child behaviors taking place far from the teacher. The second approach following each individual child for a period of time, provides ample information on child behavior, but would require an extensive

amount of observation time in order to obtain an adequate sample of teacher-child interactions. Limiting observation to a subset of the class overcomes the problem of time expenditure, but other difficulties arise. It would not be possible to determine whether previously reported differences in the distribution of teacher attention according to sex were the result of extreme behavior in a few individuals or whether such effects are evenly distributed throughout the members of each sex.

Observing the teacher and the entire class at once is the ideal method, but runs into difficulty in implementation. Serbin (1972) used this approach by having observers scan the classroom for 20 seconds and then spend 10 seconds rating behaviors which occurred. While yielding much interesting information, this method was unable to capture teacher-child interactions in any detail. Instead, the data largely consisted of frequencies of child behavior and rates of teacher responses to males and females. A possible solution to this problem is the use of electronic recording equipment such as videotape. But, to accurately record the behavior of the entire class at once would be extremely difficult requiring the use of a number of strategically placed cameras and microphones.

A combination of these approaches was decided on for the present study. The use of one videotape unit focusing on the teacher provided detailed information on teacher-child

interactions and also included a record of child behavior occuring in the vicinity of the teacher which was not followed by a teacher response. In order to obtain data on children who were seldom in the vicinity of a teacher, an additional source of information was included. A brief written observational record of every class member's activities at five minute intervals provided information on the over-all activity pattern of each child and teacher.

The five minute interval was chosen for two reasons. Pilot data indicated that the data written records could be obtained in approximately two minutes and the extra time was needed to monitor the recording equipment (i.e. make sure the camera was still focused on the teacher and that the sound is being recorded). In addition, research conducted in a Montessori nursery school by Karlson (1972) found that the average duration of a child's involvement in a particular activity was five minutes.

From the five minute records estimates of how each child distributed his or her time among the possible activities could be made and whether a child's preference for particular types of activities influenced the amount of teacher contact he or she received. For example, if a child preferred to play with blocks much of the time and teachers rarely entered the block corner but interacted with this child equally during other activities then it would appear that low teacher contact with this child was a result of the

child's activity preference rather than the teacher's attitude toward the child.

The design of the present study was to collect approximately five hours of videotaped data from each of six classrooms. This size of the data sample was dictated by several factors. First, the use of videotape makes it possible to analyze interactions in detail, but to obtain a detailed record requires transcribing time and coding videotaped records (i.e., about 10 hours to reduce one hour of videotape). Consequently, the analysis of more than 30 hours of videotape would not be possible for the present project. Pilot data indicated that five hours of taped observation in each classroom would provide a large enough data sample to include each of two or more teachers per classroom in a variety of situations. Obtaining data from six schools provided a random sample of different classroom environments, educational philosophies, and teaching styles. This sample was large enough to provide an indication of teacher-child interaction in middle class preschools. However, data collection was limited to a specific locale in the northeast and may not be generalizable to different populations.

Procedure

Data collection. Directors of area nursery schools were contacted and informed about the nature of the study. They were told that the study was concerned with children's

behavior in preschool and factors which affect teacher-child interaction. Of the schools contacted, only two refused to participate in the study. The director of one school stated that he felt shy in front of the camera and would be unable to interact effectively with the children. The second director felt that the camera would be too disruptive of regular classroom routine.

After obtaining the approval of the preschool director, a visit was then made to the school to solicit the cooperation of the teachers and to obtain a list of children attending the school. Each parent was then sent a letter explaining the project and asking their cooperation. All teachers were willing to be included and no parent objected to having their child in the study.

Taping usually occurred over a period of five consecutive days beginning the following week. In most cases data obtained the first day was not kept for analysis. This procedure allowed teachers and children to become accustomed to the equipment and minimized the possibility of behavior changes as a result of being observed. The five-day period also took into account changes in teacher and child behavior which occurred from day to day and allowed samples of different types of activities to be obtained on several different days. All data was collected by one person, a white female. While teachers may have felt self-conscious initially and children were curious, these effects appeared to diminish

after the first day. The rapid demands of the nursery school classroom appeared to prevent the teachers from being overly self-conscious and altering their behavior significantly.

The camera was set up prior to the arrival of the children and was moved as seldom as possible (it was necessary to move the camera if the class moved from one room to another). When the children arrived, one of the teachers was asked to wear the microphone. If the teacher engaged in one activity for more than 15 minutes and there was a second teacher present, the camera was then switched to the second teacher if possible. An effort was made to observe each teacher in a variety of situations. While the equipment was recording, the experimenter was situated nearby, obtaining records of each child's position in the classroom at five minute intervals. The records were made on sheets containing a schematic layout of the classroom. At each five minute interval one sheet was filled in, placing each child's name at the place he or she was then occupying in the classroom and indicating what type of activity was taking place in each area and the location of the teachers. The experimenter stood behind the camera only when it was necessary to adjust the camera to keep the teacher in focus.

After all taping was completed teachers were asked to complete a brief questionnaire (see Appendix A).

The questionnaire included three questions previously

used by Silberman (1969) and two additional questions to provide a broader indication of teacher attitude. The questions were designed to determine which children the teacher was attached to, which children the teacher was indifferent toward, and which children the teacher felt rejection towards (categories used by Silberman). The purpose of identifying the children who fell into each of these attitudinal categories was so that comparisons could be made of sex differences in teacher-child interactions with these sub-groups. For example, if teachers are biased in favor of traditional sex-role behavior, attachment females may be more passive and dependent than rejected females and attachment males may be more independent and active than rejected males.

In addition, two questions were included asking teachers to identify the classroom activities they most preferred and least preferred. These additional questions were included to test the conclusion arrived at by Fagot & Patterson (1969) that more reinforcement is given to females during teacher preferred activities.

Data Reduction

Five-minute interval data. Schematic sheets, filled out at five-minute intervals in each classroom, were analyzed to obtain the total number of minutes each child was present in the class during the study, the number of minutes each child spent in the vicinity of the teacher, and the number

of minutes each child spent in each type of activity. The total number of minutes present was computed by counting up the number of sheets the child was recorded on and multiplying by five to arrive at the approximate number of minutes present. A child was considered in the presence of the teacher if the child was participating in the same activity as the teacher or was within approximately five feet of the teacher. The number of sheets on which the child was in the vicinity of the teacher were counted and multiplied by five to determine the number of minutes the child was in the vicinity of the teacher.

Activities described on the schematic sheets were grouped into seven categories based on differences in location, type of materials used, amount of movement, and the role of the teacher (see Appexdix B). For each teacher and child the number of times recorded in each type of activity was tabulated and multiplied by five to obtain the approximate number of minutes spent in each activity type.

Video-tape records of teacher-child behavior. Video-tapes were transcribed with the help of several undergraduate assistants. The transcripts included all teacher-child dialogue and significant non-verbal behavior. Non-verbal behaviors included were acts of aggression, (e.g., hitting, kicking) non-verbal attention seeking, (e.g., handwaving, touching) and non-verbal responses to verbal conversation (e.g., child's response when the teacher asks him or her to

sit down). In addition, a description of the activity engaged in and information necessary to understand the dialogue was included. (Samples of transcribed dialogue appear in Appendices D and E.)

After each tape was transcribed it was divided into periods of 15 seconds. During each of these periods a rating was made indicating the name and sex of each child present, what activity they were engaged in, whether or not the child was cooperating and the total number of children present. The protocol is presented in Appendix C. This information was necessary in order to assess how much time each child was available for interaction, and under what conditions (activity and group size). Child cooperation and non-cooperation was rated to provide an indication of how often the child misbehaved. This enabled comparisons to be made regarding the number of teacher criticisms for misbehavior. It was hypothesized that children who spent more time misbehaving would receive more behavior correction.

The choice of 15 seconds as the duration of the interval was indicated by the fact that the duration of some misbehavior might be short (e.g., the child might spend only 10 seconds fighting with peers). Using longer periods might allow the behaviors to occur several separate times, but they would still be coded as only one occurrence. Shorter periods would provide too much redundant data, and would be difficult to accurately measure.

After all tapes were transcribed, data obtained on the 15 second period ratings were summarized for each child. The 15 second periods were multiplied by 240 to convert the data to hours. The number of hours each child was present on tape, spent in each type of activity, each group size, and cooperating or not cooperating was determined. A computer card was punched for each child containing this information.

Behavior code. In order to devise a behavioral coding system, a portion of transcribed dialogue was studied in detail and a list was made of different types of teacher and child responses considered relevant to the study. The initial list was quite detailed and coded each utterance separately. This system was tested on additional transcribed data, but it was difficult to establish an adequate level of reliability and there was a problem in connecting utterances on the same topic with each other. After extensive modification, the present coding system was arrived at (see Appendix D for the final coding system). Criteria for dividing dialogue into conversational units and samples of divided conversations appear in Appendix E. Basically, a conversation was composed of a number of consecutive or related exchanges between a teacher and child on the same topic. Transcribed dialogue was divided into conversational units and checked for accuracy by the experimenter while viewing the videotapes.

The code used to categorize conversations was composed

of eight behavioral measures (see Appendix D). Some of these measures applied only to conversations which were initiated by the child. Teacher initiated conversations included: (a) the child's behavior just prior to the beginning of the conversation (cooperation and non-cooperation); (b) the teacher's evaluation of the child (praise, neutral, or behavior correction); (c) the level of attention the teacher directed toward the child (minimal attention, conversation, performs act for the child); (d) the general content of the teacher's remarks (procedural-direction, encourages competence, helping, personal remarks); (e) the child's over-all response to what the teacher said (negative, neutral-positive).

Each of these categories measured a different important aspect of the teacher-child interaction. The first category took into account how the child was behaving before the teacher initiated. It was hypothesized that children who were uncooperative were more likely to receive criticism. The teacher's evaluation of the child, level of attention, and content described different aspects of the teacher's behavior and provided information on how much attention and of what type the child received. The child's over-all response indicated whether the child responded pleasantly, thereby encouraging future interactions, or negatively.

Child initiated conversations included: (a) the amount of attention the child sought (child makes statement--no reply needed, child asks question--reply expected, child

makes request--action expected); (b) intensity of demand (normal demand, strong demand--extra attention-getting behaviors used); (c) the general content of the child's remarks (gain attention, avoid task, gain materials, gain help, gain information, pro-social behavior); (d) the teacher's evaluation of the child (praise, neutral, behavior correction); (e) the level of teacher attention (no attention, minimal attention, conversation, performs act); (f) the general content of the teacher's response (procedural direction, encourages competence, helping personal remarks, no response).

The amount of attention sought and the intensity of the child's demand provided important information on different aspects of the child's initiating remarks. It was hypothesized that children who expected more attention from the teacher and used extra attention-getting behaviors would get more teacher attention. Sex differences in these behaviors could account for differential treatment from the teacher. The teacher behaviors were similar to those recorded in teacher initiated conversations.

Reliability. After the final form of the code was arrived at, the experimenter and eight undergraduate assistants coded three hours of tape to obtain reliability ratings. The coders were divided into three groups and each group coded two half-hour segments of tape. After each half-hour was coded reliability ratings were calculated and

the code was further clarified. (Clarifications of the code appear in Appendix D: Addendum.) Reliability was calculated for each category of behavior using the following formula. For a given pair of observers, Reliability = $\frac{\text{number of agreements}}{\text{number of agreements and number of disagreements}}$. Coders who obtained reliability ratings of less than 75% agreement received further clarifications of categories and were asked to recode the tape. Following this procedure all coders were in at least 75% agreement with other members of their group (see Table 2 for a detailed analysis of coder reliability). Each coder then coded three hours of additional tape independently. An effort was made to assign each coder a half-hour tape from each school. In this way, individual differences in coding would be spread out over all of the schools. The experimenter also coded approximately 10% of the conversations on each tape. These conversations were chosen randomly and were coded as a reliability check. In most cases reliability remained high, but if agreement fell below 70% for any category, discrepancies were clarified and the coder was asked to recode the tape for that category. Reliability was then rechecked on another set of randomly chosen conversations.

Each conversation was coded on to a general sheet and information identifying the child, school, teacher, and activity was added. Later data cards were punched from the general sheets. Data cards were then grouped so that all

conversations involving a particular child were together and then summarized for each child.

Questionnaire Data. The teacher questionnaire responses were tabulated for each school to determine which activities were most preferred at that school and which children teachers' selections indicated attachment, rejection and indifference towards. Activity preferences were determined by tabulating which activity categories were cited most frequently as "most pleasant" by the teachers (see Appendix A, Question 5). Least preferred activities were those cited most often as "least pleasant" by teachers (see Question 4). Attachment children were selected for each school by counting the number of times a child was picked by teachers for being a joy in the classroom (Question 1) or to participate in a special trip (Question 6). The three children chosen most frequently were selected as attachment children. In cases where there was a tie a fourth child was included. Rejection children were those chosen most often by teachers to be eliminated from the class (Question 3) or who would "drive a substitute crazy" (Question 7). In one instance a child appeared in both the attachment and rejection categories. This child was not included. Children classified in the indifferent category were those who teachers felt "least prepared to talk about." Children who were selected by any teacher for one of the other categories were excluded from the indifferent category.

Data Analysis

In order to standardize comparisons between children, the teacher-child interactions engaged in by each child were converted to rate per hour. Since all children did not appear on tape an equal amount of time, the number of times an event occurred was divided by the amount of time the child was recorded on tape to arrive at the child's rate per tape hour of that event. For some analyses males and females were compared on the proportion of conversations which were of a given category. For example, males and females might not differ in rate per hour of help seeking, but this behavior may constitute a much higher percentage of the content of the conversations initiated by one sex or the other. Thus, when this type of comparison was of interest, percentages were determined for each child.

The major statistic used to test for significant sex differences in the teacher-child interaction data was the median test. Because a normal distribution could not be assumed and sample variance was not necessarily homogeneous a non-parametric statistic was appropriate. The median test compares two independent samples and determines whether they are drawn from a population with the same median. (Siegal, 1956). To perform this test the median of a given variable was determined for the combined sample of males and females at each school. Then, the number of males and females above and below the median was calculated. These figures were then

pooled for the six schools. If no sex differences were present then approximately the same number of each sex would be above the median as would be below. A chi-square test was then performed comparing the numbers of males and females above and below the median. All tests were two tailed so that a significant chi-square value indicated that the two sexes differed on that variable, but the direction of the difference was not specified. In some instances where a particular type of event rarely occurred, many children had zero scores. Since zero was then the median score, comparisons were made on the number of children receiving scores above zero for each sex versus the number receiving zero scores.

A second test was used to determine whether teachers and children distributed their time equally amongst the seven activity categories. A Friedman's two-way analysis of variance by ranks test was used to test these comparisons (Siegal, 1956). The Friedman ANOVA tests whether N matched samples are drawn from the same population. To conduct this test the median percentage of time spent in each activity category was determined for each school and then tank ordered. The ranks assigned to each category for the six schools were then summed to arrive at an overall rank for each activity category. The chi-square statistic was then used to test for significant differences in overall rank sums.

In several instances it was appropriate to compare the rate that one event occurred with the rate that a second event occurred (e.g., the rate that praise was given versus the rate that behavior correction was given). In these cases the Wilcox Matched Pairs test was used.

For all statistical tests if the probability of obtaining that result by chance was .10 or less, it was reported. Results significant at the .10 level were included because these data may provide an indication of effects detectable with a more refined behavior code. In addition, the chi-square statistic is relatively insensitive to more subtle differences and tends to lack power in detecting true differences (Siegel, 1956).

Hypotheses

Presence effects. Results were analyzed to determine if there were sex differences in the amount of time each child was available for observation, remained in the vicinity of the teacher, and appeared on tape. Also the amount of time spent in each group size.

1. Based on previous research (Hutt, 1972; Lewis, 1973) it was hypothesized the females would spend a greater percentage of time in the vicinity of the teacher. Because videotaping focused on the teacher and those children near the teacher it was also expected that females would have a higher percentage of time on tape than males.

2. It was hypothesized that females would spend a greater percentage of time in small group activities where there was greater opportunity for teacher contact than would males.

Activity effects and rate of praise. Results were analyzed to determine the percentage of time each teacher and child spent in the different types of activity, teacher preference of activities, rate of teacher-child interaction and activity type, rate of praise and criticism and activity type, praise and criticism combined with different types of behavior.

1. It was hypothesized that there would be sex differences in children's activity choices. Males were expected to spend more time in active, male appropriate activities (active floor play and large muscle activities). Females were expected to spend more time in quieter activities such as listening to stories and arts and crafts (Fagot & Patterson, 1969).

2. It was expected that females would spend more time in the activities that teachers spent the most time in and expressed a verbal preference for (Fagot & Patterson, 1969) and that activities preferred by teachers would be quieter activities with high rates of teacher-child interaction.

3. It was expected that teachers would give more praise during activities they themselves preferred (Fagot & Patterson, 1969).

4. It was hypothesized that males and females would not differ in overall rate of praise (Fagot & Patterson, 1969; Meyer & Lindstrom, 1969) but that they would receive different types of praise. Based on correct sex-role stereotypes, males were expected to receive more praise for competence while females were expected to receive more praise for personal appearance and social behavior and praise in conjunction with teacher help.

Misbehavior effects. Results were analyzed to determine the amount of time each child spent misbehaving, the rate at which each child received teacher initiations while misbehaving, the rate at which each child received behavior correction and other types of teacher responses which misbehaving.

1. It was hypothesized that teachers would respond at a higher rate to misbehavior than to cooperative behavior and that their responses would more often contain behavior correction (Serbin, 1972).

2. Research by Serbin (1972) found males to misbehave at higher rates than did females. Meyer and Lindstrom (1969) found no sex difference in rate of misbehavior. Since the present study sampled a population more similar to that studied by Serbin it was hypothesized that in the population this study sampled, males would show higher rates of misbehavior than would females.

3. It was hypothesized that if teachers responded at

higher rates of misbehavior, and males misbehaved at higher rates than did females, then misbehaving males would receive high rates of teacher behavior correction.

Teacher initiations. Results were analyzed to determine if there were sex differences in the rate at which each child received teacher initiations, the content of the initiations, and the child's response to the initiations.

1. Based on previous research (Serbin, 1972), it was expected that teachers would initiate conversations with cooperating males at a higher rate than with cooperating females.

2. Males were expected to receive initiations encouraging competence at a higher rate than were females. Females were expected to receive initiations of help at higher rates than would males (Serbin, 1972).

Child initiations. Results were analyzed to determine if there were sex differences in the rate at which children of each sex initiated conversations with the teacher, the content of the child's initiations, the use of extra attention-getting devices, and the amount of teacher involvement sought.

1. It was hypothesized that males would initiate conversations at higher rates than would females (Serbin, 1972).

2. It was expected that males and females might differ according to the type of response initiated (seek attention, avoidance, gain help, gain materials, gain information,

prosocial), the amount of attention sought (child makes statement, child asks question, child requests action) and in the intensity of the demand (normal demand, use of extra attention-getting behaviors); no specific predictions were made.

Teacher response to child initiation. Results were analyzed to determine if there were sex differences in the level and content of teacher attention received when males and females initiated conversation.

1. It was hypothesized that teachers would respond to child initiations differently according to the sex of the child, and in support of current sex-role stereotypes. More specifically, females seeking help were expected to receive help at higher rates than were males (Serbin, 1972). Males seeking information were expected to receive competence encouragement at higher rates than were females (Serbin, 1972).

2. It was predicted that level of teacher attention (no attention, two sentences or less, three sentences or more, performs act) would differ according to sex of child and type of child initiation (Serbin, 1972).

Children receiving attention at high rates. Children in each class were ranked according to overall rate of teacher-child interaction. Children falling into the top 25% of the class, and bottom 25% of the class were compared with other children. Differences between each group and other children in the sample on sex distribution and rate of misbehavior

were considered. Also children in the top 25% of the class were compared with other children on rate of teacher initiation and different types of child initiations.

1. It was hypothesized that after children in each class were ranked on overall rate of teacher-child interaction that there would be a greater proportion of males in the top 25% than of females (Martin, 1972). It was also expected that males in the top 25% would have higher rates of misbehavior than other children.

2. It was predicted that a greater proportion of females would be ranked in the bottom 25% on overall interaction rate. It was expected that females in the bottom 25% would have higher rates of misbehavior than did other females (Martin, 1972).

Attitude groups. Results of the teacher questionnaire provided an indication of which children teachers enjoyed the most, felt rejection towards, and noticed least. Differences between these groups and other children in sex distribution, amount of misbehavior, and various types of teacher-child interaction were analyzed. Males and females in each group were also compared with each other on rates of seeking and receiving help and rates of seeking information and receiving competence encouragement.

1. It was hypothesized that the groups would differ in proportion of males and females from the remainder of the sample, more specifically, it was predicted that the

rejection group would be composed of a higher proportion of males (Good & Brophy, 1972). No other specific predictions were made.

2. It was expected that the children enjoyed most (referred to as attachment children by Silberman) would receive praise at higher rates than the remainder of the sample.

3. Rejection children were expected to engage in more teacher-child interactions than the remainder of the sample (Silberman, 1969).

4. Indifference children (those noticed least) were expected to engage in teacher-child interactions at a lower rate than the remainder of the sample and to receive lower rates of praise (Silberman, 1969).

5. Attachment females were expected to differ from attachment males. Females were expected to seek and receive help at higher rates while males were expected to seek information and receive competence encouragement at higher rates (Feshback, 1971; Levitan & Chananie, 1971).

RESULTS

The results are presented in the same order as were the hypotheses and are followed by a summary of major findings. Statistical tables referred to can be found in Appendix F.

Reliability

Reliability values were calculated for each category of behavior. Present in Table 2 are values obtained during training (Table 2A and 2B) and during the coding of the data (Table 2C). The average rate of reliability for the eight categories of behavior ranged from .73 to .89 during the first training phase, .78 to .89 during the second training phase and .77 to .92 during the coding of the data.

Insert Table 2 about here

Reliability of coded data is actually somewhat higher than these figures suggest, since any tape where spot checks resulted in agreement of less than .70 on any category was recorded.

Presence Effects

It was hypothesized that there would be no sex differences in amount of time children were present during the observation period. Females were expected to spend a greater percentage of time near the teacher and consequently be

recorded on tape at higher percentages of the observation period than were males. It was also hypothesized that females would spend a greater percentage of time in small groups with the teachers, while males would be present more often during larger group activities.

The results of analyses on presence effects are presented in Table 3. The amount of time each child was present at school while videotape was being recorded was

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Insert Table 3 about here

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determined from the schematic sheets. The median period present for children in each classroom ranged from three hours to six hours. Results indicated that there was a tendency for females to be present for more observation time than were males, (X^2 3.82 df1, $p < .10$). This effect may be a result of chance or may reflect a higher absentee rate for males. The median amount of time children were recorded on tape ranged from 1.5 hours to 3.01 hours for the six classes. Median percentages of time ranged from 20.6% to 57.2%. No significant sex differences were found on these measures.

The percentage of the observation period each child spent in the vicinity of the teacher(participating in the same activity of within five feet) and away from the teacher was calculated from the schematic sheets. An extended median test was performed comparing males and females on the

percentage of time spent away from the teacher. Males were found to spend significantly more time away from the teacher than did females (X^2 12.26 df1, $p < .001$).

In addition to taking into account the amount of time males and females spent near a teacher it was also important to consider the number of other children present. Obviously, the greater the number of children present, the lower the rate of teacher-child contact that would be expected for any given child. Tests were conducted comparing males and females on the percentage of taped time spent in each group size. No differences were found in percentage of time spent in group size 1 through 3. But, males tended to spend somewhat more time in large groups (X^2 2.83 df1, $p < .10$).

Activity Effects and Rate of Praise

It was hypothesized that males and females would differ in percentage of time spent in different types of activities. It was expected that males would spend more time in active play (category 6) while females and teachers would spend more time in quieter activities that provided a greater opportunity for social interaction. Teacher's verbal preferences from questionnaire data were expected to reflect these preferences.

The percentage of time each child spent in each of the activity categories was determined from the schematic sheets. A Friedman two-way ANOVA was performed for each sex to

determine whether either sex spent a significantly greater proportion of time in some activities, and less time in others. Results are presented in Table 4. Females were found to spend more time in category 1 activities (instruction and art) and less time in category 3 (dramatic play)

Insert Table 4 about here

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and category 6 (active floor play and large muscle activity) (X^2 12.35 df6, $p < .06$). Males spent more time in category 7 activities (transition and undirected activity) and least time in category 3 activities (dramatic play) (X^2 18.86 df6, $p < .01$).

In addition, males and females were compared on time spent in each separate activity category. Results, presented in Table 5, indicated that females spent significantly more time in category 1 activities (instructional and art

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Insert Table 5 about here

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activities) than did males (X^2 17.13 df1, $p < .001$). Males were found to spend significantly more time in category 6 activities (active floor play and large muscle activity) than did females (X^2 29.70 df1, $p < .001$), and showed a tendency (X^2 3.47 df1, $p < .10$) to spend more time in category 2 activities (manipulative toys and special equipment). Analyses were also conducted to determine whether

these preferences were influenced by teacher presence or absence and results appear in Table 6. Females were found to spend significantly more time in category 1 activities

Insert Table 6 about here

than did males, whether or not a teacher was present (X^2 18.67 df1, $p < .001$; X^2 21.09 df1, $p < .001$). Males spent more time than females in category 6 activities when a teacher was present (X^2 5.80 df1, $p < .025$), and in both categories 6 and 7 when no teacher was present (X^2 16.37 df1, $p < .001$; X^2 6.72 df1, $p < .01$) but did not differ from females in time spent in category 7 when a teacher was present.

Activity categories were tanked for each school according to the rate at which teacher-child interaction occurred during each activity type (total number of interactions/ amount of tape time recorded in that activity). A Friedman two-way analysis of variance by ranks was performed to determine whether differences in rate of teacher-child interaction were present. Results, presented in Table 7, indicated no significant differences were present.

Insert Table 7 about here

Teacher activity preferences were determined from questionnaire information. The number of teachers listing an

activity category as "pleasant" or "unpleasant" was tabulated and is presented in Table 8. Negative choices were subtracted from positive choices to provide a difference score.

Insert Table 8 about here

Activities found to have the highest positive scores were category 1 (instructional and art activities) and category 2 (manipulative toys and special equipment). Activities with high negative scores were category 7 (transition and undirected activity) and category 6 (active floor play and large muscle activity). In addition, the percentages of time teachers spent in each category of activities were determined for the total observation period and for the time recorded on tape. Activities were rank ordered for each class on each of these measures. Ranks were summed across schools for each of the activity categories and a Friedman two-way analysis of variance was performed. Results are given in Table 9. Significant differences were found in the proportion of time spent in the various activity categories during

Insert Table 9 about here

the total observation period (X^2 20.74 df6, $p < .01$) and during the time recorded on tape (X^2 13.40 df6, $p < .05$). In both cases the greatest proportion of time was spent in category 1 activities (instructional and art activities) and

smallest proportion of time was spent in category 3 activities (dramatic play) and category 6 activities (active floor play and large muscle activities).

Thus, teachers preferred and spent more time in category 1 activities (instructional and art activities). Females also spent the greatest proportion of time in category 1 activities, and significantly more time in these activities than did males. Males spent the greatest proportion of time in category 7 activities, and significantly more time than females in category 6 activities. These activities were also those that teachers regarded as most unpleasant and avoided if possible.

Fagot & Patterson (1969) suggested that teachers gave more reinforcement (praise) to both males and females during activities preferred by teachers and females. To test this effect in the present study rates of praise and behavior correction were calculated for each class during category 1 activities, category 6 activities and category 7 activities. The rate of praise was calculated by summing the total number of conversations containing praise which occurred during a particular category of activity and dividing by the number of hours that activity was observed on tape. The same calculations were used to determine the rate of behavior correction. A wilcox matched pairs test was used to compare rate of praise during category 1 activities with rate of praise during category 6 activities and rate of praise during

category 7 activities. Results presented in Table 10 indicated no significant differences were present. Similar

Insert Table 10 about here

tests were conducted for rates of behavior correction. Results, presented in Table 11, show that behavior correction was given at higher rates during category 6 activities in

Insert Table 11 about here

four schools and during category 7 activities in five schools. However, these results are not significant.

In addition, tests were conducted to determine whether there were significant sex differences in rates of praise or behavior correction during these types of activities. Table 12 gives the results of extended median tests. There were no differences in rates of praise received. However,

Insert Table 12 about here

males received behavior correction at a higher rate during category 1 activities and category 6 activities.

Males and females were also compared on overall rates of praise and behavior correction and on the type of praise and behavior correction received. Results, presented in Table 13, indicate that there were no significant sex differences in overall rates of praise, but that females

received significantly more praise combined with teacher

Insert Table 13 about here

help than did males (X^2 4.15 df1, $p < .025$). Males were found to receive behavior correction at higher rates than females (X^2 5.80 df1, $p < .025$). Behavior correction was most often combined with the teacher giving directions and males received higher rates of this type of response than did females (X^2 12.26 df1, $p < .001$). No sex differences were found in rates of personal praise or in rates of praise or behavior correction combined with competence encouragement.

Misbehavior Effects

A child was rated as misbehaving when interfering with peers (pushing, hitting, name calling), destroying property (kicking, throwing toys or furniture) or purposefully not following directions (ignores, disobeys rule). Previous research indicated that these behaviors were performed at higher rates by males than by females and that males received disproportionately more reprimands for misbehavior (Serbin, 1972). Moreover, teachers were previously found to respond to misbehavior at a much higher rate than to cooperative participation, suggesting that misbehaving males might receive high rates of attention. However, former results were based on group rates and might have resulted from high

rates of misbehavior on the part of a few individuals; the present study determined the rate of misbehavior and criticism for each individual child.

Males and females were compared to determine if consistent sex differences were present in the percentage of the time spent misbehaving or in the rate of teacher initiation during misbehavior. The results of these analyses are presented in Table 14. Males were found to have significantly higher rates of misbehavior than did females (X^2 24.60 df1, $p < .001$). For each child the time spent misbehaving

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Insert Table 14 about here

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was divided by the number of conversations the teacher initiated to him or her during misbehavior. Males and females were then compared on rate of teacher initiation during misbehavior but no sex differences were found. However, teachers did initiate more conversations during misbehavior than during cooperative behavior in every class (Wilcox matched pairs test $T=0$, $p < .05$).

The conversations initiated by teachers during misbehavior were analyzed to determine if sex differences were present in rate of behavior correction, level of teacher attention received, and content. The results presented in Table 15 indicated that most conversations contained

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Insert Table 15 about here

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behavior correction, were less than two sentences, and were of procedural content (gives directions, corrects behavior). Few significant sex differences were found when each of these variables were considered separately. A small percentage of teacher initiations consisted of active teacher attention or active teacher attention combined with behavior correction. These were largely instances where the teacher attempted to distract a misbehaving child or restrain and/or remove the child from the situation. Males were found to receive larger percentages of these types of responses than did females (X^2 6.35 df1, $p < .025$; X^2 7.91 df1, $p < .005$). When females received behavior correction it was more often two sentences or less (X^2 27.14 df1, $p < .001$).

Teacher Initiations During Cooperative Behavior

Based on previous research it was hypothesized that (a) males would receive teacher initiations at a higher rate than would females, (b) males would receive competence encouragement at higher rates than females, (c) females would receive help at higher rates than males, and (d) males would respond to teacher initiations in a negative manner (defiance, ignoring) more often than would females.

Males and females were compared on rates of teacher initiated conversations. The results, presented in Table 16, indicate that teachers initiated conversations at a significantly higher rate with males (X^2 7.69 df1, $p < .01$). Males

and females were then compared according to the type of

Insert Table 16 about here

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teacher initiations received. Males received slightly higher rates of procedural initiations (X^2 2.83 df1, $p < .10$) and a higher percentage of these initiations were two sentences or longer for males (X^2 4.18 df1, $p < .05$). Males also received competence encouragement at higher rates (X^2 4.18 df1, p .05), while females received helping initiations at a slightly higher rate (X^2 2.86 df1, $p < .10$). There was no indication of sex differences in the level of teacher involvement during the conversations for either competenence encouragement or helping. Lastly, males and females did not differ on rate of personal initiations received. However, females received a higher percentage of low level teacher involvement (two sentences or less) (X^2 5.65 df1, $p < .025$), while males received a greater percentage of active teacher involvement (X^2 4.60 df1, $p < .05$). No sex differences were found in the percentage of negative responses following teacher initiations.

Child Initiations

Based on previous research it was hypothesized that males would initiate more conversations than would females. It was also expected that males and females would differ with respect to content of initiation, intensity of demand,

and amount of teacher attention expected.

A median test was conducted to determine whether sex differences existed in rate of child initiation. Results appear in Table 17; no significant difference was found. Child initiations were coded for six different types of content; these were: (a) seeks attention, (b) avoids task, (c) gain help, (d) gain materials, (e) gain information, and (f) pro-social. Tests were conducted to determine

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Insert Table 17 about here

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whether males and females differed in rates of initiation for any of these content types. In addition, the sexes were also compared on the percentage of initiations that were of each type. The results indicate that males initiate more avoidance conversations than do females (X^2 4.48 df1, p .05) and that females have slightly higher percentages of help initiations than do males (X^2 3.10 df1, $p < .10$). No other significant differences were found.

It was anticipated that children using extra attention-getting techniques would receive more attention and that sex differences might exist in this area. Males and females were compared on the percentage of initiations where an extra attention-getting device was used. No sex differences were found (see Table 18). Further analyses were conducted

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Insert Table 18 about here

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to determine whether sex differences were present for any types of child-initiated conversations. Results showed that females used attention-getting mechanisms a greater proportion of time than did males when seeking attention (X^2 7.20 df1, $p < .01$). But no sex differences were apparent during other types of child initiations.

Another important aspect of child initiation was the amount of attention the child sought. Initiations were coded into three categories: (a) statements, to which the teacher might or might not respond, (b) questions, where a verbal answer was expected, and (c) requests for action, where the child attempted to get the teacher to do something. Analyses were con ducted to determine whether males and females differed in the percentage of initiations that were of each type. Results, presented in Table 19, indicate that no significant sex differences were present.

Insert Table 19 about here

Teacher Response to Child Initiation

It was hypothesized that teachers would respond to child initiations differently according to the sex of the child. It was expected that females requesting help would receive help more often than males, who were expected to receive other types of response or no response. Males seeking information were expected to receive more competence instruction

than were females. It was also expected that the amount of teacher involvement following child initiations might vary according to sex, although no specific hypotheses were formulated.

Five types of teacher response were coded: (a) procedural (directions, behavior correction), (b) competence encouragement (expect and encourage independent learning), (c) helping (performing a task for the child instead of showing him or her how), (d) personal (sociable conversation), and (e) no response. Males and females were compared on the percentage of initiations followed by each of these types of teacher response. Results, presented in Table 20, indicated that male initiations were followed more often by no

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Insert Table 20 about here

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response than were female initiations (X^2 5.80 df1, $p < .025$). No other significant differences were found. Next, males and females were compared on the type of teacher response received for each of the six different types of child initiation. Results, presented in Table 21, indicate that females seeking help received help a greater proportion of the time

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Insert Table 21 about here

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than did males seeking help (X^2 4.42 df1, $p < .05$). Also, during avoidance females received personal responses somewhat

more often than did males seeking information (X^2 5.86 df1, $p < .025$). No other significant differences were found.

Males and females were also compared on proportion of teacher responses which were two sentences or less, more than two sentences, or teachers performed an act. Results, presented in Table 22, show that females received more two-sentence-or-less responses than did males (X^2 3.15 df1, $p < .10$)

Insert Table 22 about here

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while males received slightly more responses which were two sentences or longer (X^2 3.47 df1, $p < .10$). Similar comparisons were also tested for each of the six types of child initiation. However, no significant differences were found.

Children Receiving Attention at High Rates

It was hypothesized that most of the children who had high rates of teacher-child interaction would be male. Previous research indicated that these children would have higher rates of misbehavior than would other children. More females than males were expected to receive attention at low rates, yet these females were previously found to have high rates of misbehavior.

Children in each class were ranked on the overall rate of teacher-child interaction (teacher-initiated conversations plus child-initiated conversations/time recorded on tape). Children in the top 25% of each class were designated as

high attention receivers, and children in the bottom 25% were designated as low attention receivers. Data were pooled for the six classes and chi-square tests were performed comparing the sex distribution of each group with that of the remaining children. Results presented in Table 23 indicate that significantly more males were high attention receivers (X^2 11.89 df1, p .001), but there was no difference in frequency of males and females in the low attention receivers group.

Insert Table 23 about here

The rate of misbehavior for high attention receivers was compared with that of other children. The number of children above the median was calculated for each class and then pooled. Results of a chi-square test (Table 24) show that significantly more children in the high attention receivers group were above their classroom medians (X^2 14.05 df1, p .001). To determine whether males and females in the high attention receivers group differed, each sex was compared separately with others of the same sex on rate of misbehavior. Results show that males in the high attention receivers group misbehaved at significantly higher rates than did other males (X^2 11.36 df1, p .001) but that

females in the high attention group did not differ from other females in rate of misbehavior.

Low attention receivers were also compared on rate of misbehavior. The results, presented in Table 24 show that this group showed somewhat less misbehavior than other children (X^2 2.76 df1, $p < .10$), but females in this group did not differ from other females and males did not differ from other males in rate of misbehavior.

Insert Table 24 about here

A number of tests were conducted to determine in what other ways children in the high attention-receivers group differed from other children. Results, presented in Table 25, indicate that high attention children received many more teacher initiations when cooperating than did other children (X^2 25.07 df1, p .001). But, when misbehaving, high

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Insert Table 25 about here

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attention children received initiations at the same rate as other misbehaving children. In addition, children in the high attention category were not more likely to be criticised when misbehaving, than were other children.

Other tests indicate that high attention children initiated more conversations with teachers than did other children (X^2 30.50, df1, p .001) but did not use extra

attention-getting behaviors any more often than did other children. They initiated conversations pertaining to attention seeking (X^2 35.23 df1, $p < .001$), information seeking (X^2 14.88 df1, $p < .001$), avoidance (X^2 12.28 df1, $p < .001$), and gain materials (X^2 14.88 df1, $p < .001$) at much higher rates while help seeking and pro social behavior occured at only slightly higher rates when compared to others (X^2 3.15 df1, $p < .10$; X^2 3.15 df1, $p < .10$). Nor did high attention receivers differ from others in level of attention expected. When compared with other children on the overall rate of each type of teacher response received, high attention children were found to receive procedural contacts (X^2 35.27 df1, $p < .001$), competence encouragement (X^2 17.97 df1, $p < .001$), and personal contacts (X^2 18.26 df1, $p < .001$) at higher rates than did other children. However, they did not differ from other children in rate of help received. Rates of praise (X^2 3.15 df1, $p < .10$) and behavior correction (X^2 9.15 df1, $p < .005$) were also found to be higher than for other children.

Children in the high attention group were also compared with each other to determine whether males and females in this group were significantly different. Results, presented in Table 26, indicate that males in the high attention group

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Insert Table 26 about here

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misbehaved at higher rates than did females (X^2 12.21 df1,

$p < .001$). Females initiated more statements requesting action (X^2 8.42 df1, $p < .005$) than did males. No differences were found in rate of teacher initiation or child initiation of any type. Males and females in this group were not found to differ in rate of praise, behavior correction, or other types of teacher responses received.

To determine whether high rates of interaction observed in the top 25% accounted for overall sex differences, the remaining 75% were also compared for sex differences (See Table 27). Males were still found to misbehave a greater

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Insert Table 27 about here

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percentage of time than were females (X^2 8.76 df1, $p < .005$). No differences were observed in overall rate of teacher initiation or child initiation. Females were again found to initiate help seeking at somewhat higher rates (X^2 3.42 df1, $p < .10$), but there were no sex differences in amount of attention expected. When compared on overall rate of teacher response, females received more helping (X^2 3.42 df1, $p < .10$) and more praise (X^2 2.88 df1, $p < .10$), while males received more behavior correction (X^2 3.56 df1, $p < .10$).

Groups Based on Teacher Attitude

Based on the work of Silberman (1969) it was hypothesized that children who were indicated as favorites on the teachers' questionnaire (attachment group) would receive more

praise. Children twoard whom teachers indicated rejection on the questionnaire were expected to receive more behavior correction. Children toward whom teachers indicated indifference were expected to have the lowest rate of teacher-child interaction and receive the least praise. In addition, attachment females were hypothesized to be more dependent than attachment males, that is, to seek help at a higher rate. Attachment males were found previously to be more aggressive and independent. In this study it was expected that attachment males would have higher rates of misbehavior than attachment females and would initiate information seeking conversations at a higher rate.

Analyses were conducted to test these hypotheses and to determine whether children in each of the attitude groups differed from other children in important respects. In all comparisons (unless otherwise indicated) children in a given attitude group were compared with <u>all</u> other children, (not just with those who fell into to attitude group). Children designated as attachment children were combined for the six classes producing a total of 21 children (14 females and seven males). A chi-square test was performed to determine whether this group differed in sex distribution from the remaining children. Results presented in Table 28

Insert Table 28 about here

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show that the attachment group was composed of significantly

more females than would be expected by chance (X^2 4.40 df1, $p < .05$). The rejection group was composed of three females and 14 males. When a chi-square test was performed, this group was found to have significantly more males than would be expected (X^2 6.05 df1, $p < .025$). There were 11 females and eight males in the indifference group. This sex distribution was not found to differ significantly from that of the remaining children.

Next, the number of children who were high attention receivers was determined for each attitude group. A chi-square test was performed for each attitude group to determine whether the proportion of high attention receivers in that group was different than the proportion in the remainder of the sample. Results presented in Table 29 indicate that there were significantly more high-attention receivers in the rejection group (X^2 16.09 df1, $p < .001$).

Insert Table 29 about here

Tests were conducted comparing children in each of the attitude groups with the remaining children to determine whether there were differences in rate of misbehavior and rate of initiations received while misbehaving and while cooperating. The results presented in Table 30 indicate

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Insert Table 30 about here

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that children in the rejection group misbehaved significantly more often than did other children (X^2 17.18 df1, $p < .001$), while indifference children misbehaved less often (X^2 4.07 df1, $p < .05$). When misbehaving, attachment children received teacher initiations at a lower rate than did other children (X^2 4.14, df1, $p < .05$). However, none of the groups differed in likelihood of receiving behavior correction if the teacher did initiate. Rejection children also received high rates of teacher initiation than did other children when they were cooperating (X^2 13.12 df1, $p < .001$), in contrast to indifference children who received fewer teacher initiations (X^2 4.07 df1, $p < .05$).

Comparisons were made to determine whether children in each of the attitude groups differed from other children in rate of child initiation, content of child initiation, and use of extra attention-getting behaviors. Results presented in Table 31 indicate that children in the rejection group initiated significantly more conversations than other children

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Insert Table 31 about here

(X^2 9.60 df1, $p < .005$), while children in the indifference group initiated fewer conversations than other children (X^2 6.33 df1, $p < .025$). Rejection children were found to have higher rates of attention seeking (X^2 9.60 df1, $p < .005$) and information seeking (X^2 9.60 df1, $p < .005$), but not of help seeking or prosocial behavior. Children in the

indifference group showed lower rates of attention seeking (X^2 9.10 df1, $p < .005$) and prosocial behavior (X^2 6.33 df1, $p < .025$), but not of help seeking or information seeking. Attachment children did not differ from other children on any of these behaviors. None of the groups was found to differ from other children on use of extra attention-getting behaviors.

Children from each of the attitude groups were compared with other children on the rate of each type of teacher attention received (overall). Results are presented in Table 32. Children in the rejection group received procedural contacts (directions, behavior correction) at higher rates

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Insert Table 32 about here

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than other children (X^2 4.21 df1, $p < .05$). No differences were found on rates of competence encouragement or helping and attachment children did not differ from other children on any of these comparisons.

Each attitude group was compared with the remainder of the sample on the rates that praise and behavior correction were received and on the rate that each type of praise was received. Results, presented in Table 33, indicate that there were no differences in overall rate of praise, but

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Insert Table 33 about here

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that rejection children received behavior correction at higher rates than did other children (X^2 4.07 df1, $p < .05$). No differences were found in the rate each type of praise was received for either the attachment group or the rejection group. However, indifference children were found to receive higher rates of praise combined with competence encouragement than did other children (X^2 5.78 df1, $p < .05$).

It was expected that children within each attitude group might differ in teacher attention received according to sex. However, because only small numbers of children were in each of these categories comparisons were limited to a few general indices of teacher attention and variables directly related to the hypotheses previously outlined. General indices of teacher attention on which comparisons were made included rate of misbehavior, rate of teacher criticism during misbehavior, rate of teacher initiation during cooperation and rate of child initiation. Results of these tests are presented in Table 34. In the attachment group males and females differed only with respect to the

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Insert Table 34 about here

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rate of child initiation. Females were found to initiate conversation at a somewhat higher rate than did males (X^2 3.29 df1, $p < .10$). Males in the rejection group did not significantly differ from females in any respect. In the indifferent group males misbehaved at higher rates

(X^2 3.66 df1, $p < .10$) than did females.

It was expected that attachment females would conform to the sex-role stereotype of dependency more than would rejected females or attachment males. Similarly attachment males were expected to be more independent and receive more competence encouragement than attachment females. In testing these hypotheses males and females in the attachment and rejection groups were compared on rate of child help seeking, rate of help received, rate of child encouragement received, and rate of praise for competent behavior. The results of these analyses are presented in Tables 35, 36 and 37. Attachment males were found to initiate fewer conversations seeking information than did rejection males (p .005), but no other significant differences were found.

Insert Tables 35, 36, and 37 about here

Summary of Results

1. Proximity. (a) Males spent more time away from the teacher than did females (b) Males also tended to spend a larger percentage of time near the teacher, involved in large group activities.

2. Activity Choice. (a) Females spent most time in instructional and art activities. (b) Males spent most time in transitional activities or uninvolved, and more time than females in active floor play--large muscle activities.

(c) Teachers enjoyed the most (questionnaire response) the same activities chosen by females (instructional and art activities) and spent the most time in these activities. Teachers expressed dislike (questionnaire response) for the same activities preferred by males, and spent little time in these activities.

3. Praise and Behavior Correction. (a) There were no differences in rates of praise received by males and females overall, or in praise given during any of the preferred activities. (b) However, praise given to females was often combined with help, which was not true of praise given to males. (c) Males received behavior correction at higher rates than did females overall, and also during both female-preferred and male-preferred activities.

4. Misbehavior. (a) Teachers were much more likely to respond to a misbehaving child than to a cooperating child. (b) Since males misbehaved at higher rates than did females, this effect increased the likelihood that males would receive more teacher initiations and more behavior corrections. (c) But, given that a male and female were misbehaving, teachers were no more likely to respond to one than the other.

5. Teacher Initiations During Cooperation. (a) Overall, teachers initiated conversations with males at a higher rate than with females. (b) Females received help offers at a somewhat higher rate than males, while males received more

competence encouragement and procedural initiations. (c) procedural initiations received by males tended to be of greater length than those received by females. In addition, teacher initiations of personal content tended to be brief for females, while teachers were more likely to become actively involved with males.

6. Child Initiations. (a) There were no sex differences in overall rate of child initiation. But, males did exhibit higher rates of avoidance behavior than females, while females showed somewhat higher rates of help seeking. (b) The sexes did not differ with respect to amount of teacher involvement sought or in overall use of extra attention-getting behaviors. However, when seeking attention, females did employ more extra attention-getting behaviors.

7. Teacher response to child initiations. (a) There were no overall sex differences in type of teacher response received with the exception that males more often received no response at all. (b) When data were analyzed according to type of child initiation, females seeking help were more likely to receive help than were males seeking help. Females attempting to avoid a task were more likely to receive a personal response than were males showing the same behavior. (c) Overall, teacher responses to female initiations tended to be shorter than their responses to male initiations.

8. High attention receivers compared with other children. (a) Significantly more children who were high

attention receivers were male. (b) Males in this group misbehaved significantly more than did other children, but this was not true to high attention receiving females. When misbehaving, high attention receivers were no more likely to receive a teacher response or behavior correction than were other children. (c) High attention receivers did receive higher rates of teacher initiations when cooperating than did other children. (d) High attention receivers initiated more conversations of every kind, but did not differ from other children in the use of extra attention-getting behaviors or in amount of teacher involvement sought. (e) Based on teacher initiations and child initiations combined these children received more procedural, personal and competence encouragement responses from teachers than did other children, but not more helping responses. They also received more praise and behavior correction than did others. (f) Female high attention receivers were found to initiate more requests for action than males in this group.

9. Children who were not high attention receivers (bottom 75%). (a) Males in this group were found to misbehave at higher rates than females and correspondingly received behavior correction at higher rates. (b) In contrast to results obtained for the entire sample, there were no sex differences in overall rate of teacher initiation, (suggesting that the previous result was produced by high attention receiving males). (c) Males and females in the

bottom 75% did not differ in overall rate of child initiation, type of conversation initiated, or level of teacher involvement sought. (d) However, females in the bottom 75% did receive praise and teacher help at higher rates.

10. Attitude groups. (a) The attitude groups were found to differ in sex composition. The attachment group contained significantly more females, while the rejection group contained significantly more males. The indifference group contained a balance of males and females. (b) The attitude groups differ in rates of misbehavior. Rejection children misbehaved significantly more than others, attachment children did not differ from others and indifference children misbehaved less than others. (c) Children in these groups differed from others in rates of teacher initiations received and child initiations. Rejection children received more teacher initiations and also themselves initiated more conversations than did other children; attachment children did not differ from others on these dimensions, and indifference children had lower rates of these behaviors than did others.

DISCUSSION

Several general statements can be made based on the results obtained. First, important sex differences exist in children's behavior which influence teacher-child interactions. Second, even after sex differences in children's behavior are controlled for, teachers respond to males and females differently. Finally, special sub-groups can be identified which have characteristic patterns of teacher-child interaction and may be predominantly composed of members of one sex. Each of these conclusions will be discussed.

Sex Differences in Children's Behavior

Proximity. It is evident that females spend considerably more time near the teacher than do males. Thus, if males and females engaged in teacher-child interaction at equal rates while near the teacher, females would be expected to engage in many more initiations. However, the data suggests that the sexes do not receive equal rates of interaction when near the teacher. In fact, males receive many more teacher initiations than do females, while there is no sex difference in child initiations. These two facts taken together may account for many of the conflicting results reported in previous research. Depending on how data is collected, different results may be obtained (see Table 1).

Studies collecting data by focusing on the teacher without taking into account the numbers of each sex present,

have found (predictably) that females receive more contacts (Biber, Miller & Dyer, 1972). But when the amount of time each sex is near the teacher is corrected for, males are found to receive attention at higher rates (Serbin, 1972). One study which focused on the child during a variety of situations, both when near the teacher and away from the teacher, suggests that these two factors may cancel each other out and result in no overall difference in amount of attention received (Meyer & Lindstrom, 1969). Studies focusing on the individual child (rather than obtaining group data) most likely include observations made when the child is in proximity to the teacher and when he or she is not. Although females would receive lower rates of interaction than males when near the teacher, this difference would be compensated for by their spending more time near the teacher, possibly resulting in no overall sex difference in rate of teacher-child interaction. A second study which also focused on the child (Fagot & Patterson, 1969) again found no overall difference in amount of contact received by males and females. However, the authors emphasize that during female preferred activities (where females were substantially over represented and teachers were often present) females were found to receive more positive contacts. (This finding is not surprising.)

It is clear that activity choice is related to amount of time spent near the teacher. Females spend more time

near teachers since both prefer the same activities, while males spend less time near teachers, choosing activities that teachers dislike. It is likely that activity choice also determines what types of learning can occur and teacher presence or absence may influence the extent to which opportunities for competence encouragement, helping and other behaviors occur. Pope and Edwards (1972) point out that both males and females who are assigned domestic chores and consequently remain near home in close proximity with a female adult, show female stereotyped behavior. Children assigned tasks taking them away from home showed behavior associated with male sex-role stereotypes. It can only be pointed out here, that the full extent to which activity choice in preschool may influence other behaviors is not known.

Misbehavior. Sex differences were found in rate of misbehavior. Males were found to spend a greater proportion of time misbehaving than were females. This effect was present for both high attention receivers and for other children. Teachers were much more responsive to misbehavior than to cooperative behavior and usually responded to misbehavior with behavior correction.

Child Initiations. Sex differences were observed in the present study in the type of conversations children initiated. Males initiated more avoidance interactions while females showed a higher percentage of help seeking initiations.

These differences are consistent with sex-role stereotypes of males and females. Females, viewed as more dependent, would be expected to seek help from others and males, seen as independent, would be expected to be less willing to comply with the wishes of others. Research reviewed earlier in the text suggests that such behaviors are largely shaped by adult reinforcement. Sex differences established during the first years of life may serve to perpetuate the stereotype and thereby maintain the same adult attitudes and behavior. Thus it was expected that even after sex differences were controlled for, teachers would respond differently to males and females.

Teacher Response to Males and Females Performing the same Behavior

Sex-Role stereotypes. From the results, it is evident that males and females are treated differently by teachers and that sex-role appropriate behavior is being reinforced. When cooperating, males receive more competence encouragement while females receive more help. Females seeking help were more likely to receive help than were males, and females were more likely to receive personal attention when attempting to avoid a task, whereas males received behavior correction. Overall rates of praise did not differ between males and females, but females did receive more praise combined with teacher help than did males. Males are more

often ignored, but when they do receive attention, teachers tend to be more actively involved. They receive more active behavior correction and a higher percentage of active personal attention (teacher joins in child's play). This last effect may be due to activity preference in that it would be more appropriate for teachers to join males in block play than to give verbal directions as might be the case during instructional and art activities which were preferred by females.

Classroom control. Teachers responded to misbehaving males more strongly than to misbehaving females. Males received longer conversations and more active teacher involvement (restraint/removal from situation). It is likely that these measures were employed to maintain classroom control. Males, having higher rates of misbehavior, would be more likely to continue misbehaving or resume misbehavior after shorter periods of time than would females.

Although not directly measured in the present study, it seems probable that rate of child misbehavior is related to rate of teacher initiation during cooperation. Males, who had higher rates of misbehavior, received higher rates of teacher initiations during cooperation. High attention receivers and rejection children also showed higher rates of misbehavior than did other children and received higher rates of teacher initiation. Children with the lowest rate of teacher contact (bottom 25%) also showed lower rates of

misbehavior.

From observing classroom interactions and reviewing videotapes it appears that teachers frequently initiated conversations with children who often misbehaved in order to keep these children involved in the activity at hand and prevent further misbehavior. Children with high rates of misbehavior were also frequently reminded of rules and expectations.

High Attention Receivers

Results indicate that males as a group behave differently and receive different rates of teacher response than do females as a group and that both children and teachers behave in ways so as to reinforce sex-role stereotypes. However, it was hypothesized in the present study, that a few individuals of either sex might behave in such a way as to create an inaccurate view of all children of that sex. In particular, previous research (Martin, 1972) suggested that behavior problem males received higher rates of attention than did other children. In order to discover who were the children who received the highest rate of teacher-child interaction, how they behaved, and the type of attention they received, the children receiving the highest rates of interaction (top 25%) were compared with other children.

The results show that, as Martin (1972) found, high attention receivers were mostly males with high rates of

misbehavior. These children initiated more conversations and received more teacher initiations. Their rates of attention-seeking, avoidance, information seeking and attempts to gain material were much higher than those of other children, while help seeking and prosocial behavior occurred at only somewhat higher rates in the high attention receiving group. Combining teacher initiations with teacher response to child initiations to obtain an overall rate of teacher response we find that high attention receiving children receive higher rates of all types of teacher response except helping. Thus high attention receivers appear to be independent, active, misbehaving males who command more of every kind of teacher attention except help.

Males and females in the high attention receiving group were compared for sex differences. Males who were high attention receivers misbehaved at higher rates than did other males but females did not differ from other females. This result suggests that females who do receive high rates of attention, may be quite different from males receiving high rates of attention.

Males and females in the remaining 75% were compared to determine whether sex differences in child behavior and teacher-child interaction were still present after the most active children were eliminated. Major differences were still present. Males in this group showed higher rates of misbehavior, and received more behavior correction, while

females had higher rates of seeking help and teachers responded to females by providing more help. Several differences were observed in this group when compared to the entire group (including the top 25%). First, males in the bottom 75% did not receive higher rates of competence encouragement or procedural initiations than females in this group as was previously found when the entire sample was analyzed. Secondly, females in the bottom 75% received slightly higher rates of praise than did males.

Thus, when high attention receivers are not included there are fewer sex differences but males are still more disruptive and females are more dependent. Higher rates of competence encouragement and procedural initiations can be largely attributed to the active males in the top 25%.

Attitude Groups

The relationship between teacher's feelings toward children and teacher-child interactions was considered in the present study. Children in the attachment group, rejection group and indifference group were compared according to sex distribution of each group, behaviors characteristic of each group and teacher-child interactions.

Attachment children. The attachment group is composed of twice as many females as males. This group contains three out of seven females from the high attention receivers group (nearly 50%) but only two out of the 24 male high

attention receivers (8%). Attachment children present a picture of moderation. They are neither higher nor lower than other children in rate of misbehavior or rate of initiation for any of the conversation types. They receive fewer teacher initiations when misbehaving, perhaps because teachers have more confidence in these children or simply more fondness for them. But attachment children do not differ from others in overall rates of praise or behavior correction. Females in this group initiated more conversations than did the males but no other sex differences were found. In general these females appear to be active, sociable, and well behaved. The males in this group seem to be less active. They do not initiate as many conversations as the females and seek information at lower rates than do rejected males. In addition five out of seven of these males are below their class medians on rate of misbehavior, and they do not differ from the females in the group on rate of misbehavior. Thus attachment males are quiet and well-behaved, but are not dependent in the sense of seeking help.

Rejection children. The rejection group consists of five times as many males as females and is overwhelmingly composed of males who were high attention receivers. Consequently, children in the rejection group showed a similar pattern to that noted earlier for high attention receivers. Rejection group members had higher rates of misbehavior than did other children and received more procedural responses

and behavior correction from teachers. They also received more teacher initiations when cooperating than did other children. Looking at male and female differences in this group males were again found to have higher rates of misbehavior and to receive more teacher initiations when cooperating than did females. Although not statistically significant (perhaps due to the small N), nine out of fourteen males in this group were above their class medians in help seeking, while all three of the females were below class medians. Perhaps it is this role reversal which causes teachers to reject these males rather than other children who also had high rates of misbehavior. Yarrow, Waxler and Scott (1971) observed that dependent behavior in males was more frequently followed by negative teacher attention, than was similar behavior in females or independent behavior in males.

Indifference children. The indifference group contained slightly more females than males, but the difference was not significant. Only one male and one female in this group were also high attention receivers. In general, the indifference group presents a pattern of inactivity. These children have the lowest rates of misbehavior and initiate conversations at lower rates than do other children (particularly conversations which would draw attention to themselves such as attention seeking and prosocial behavior). They do not receive behavior correction or praise at different rates

than other children, but teachers try harder to praise these children when they perform competently. Perhaps these are shy children lacking in confidence. Females in this group had very low rates of misbehavior and rarely were corrected when misbehaving. The males were more active than the females, and showed average rates of misbehavior, but were probably less active than the average male.

Conclusions

Children within each sex group differ widely in both behavior and in teacher response received. However, certain subgroups within each sex have been identified and statements can be made about the type of treatment these children evoke. Active, misbehaving males certainly receive the highest rates of teacher response when in the vicinity of the teacher. But, whether receiving high rates of teacher attention is desirable can certainly be argued, and general statements made by other researchers regarding which sex receives the best treatment in school appear unwarranted. For example, while few would disagree that receiving competence encouragement at higher rates would be anything but beneficial, it could be the case that even this type of behavior could be applied too strongly particularly at such a young age. Thus, more detailed research would be necessary to make judgments regarding the type of experience that would be most beneficial to children in developing future intellectual and social

competence

However, several conclusions can be drawn regarding teacher preferences and teacher behavior. Evidence suggests that teachers' attitudes and behavior are influenced by both the need to maintain order in the classroom and by sex-role stereotypes. Children who are overly distruptive are disliked as are those who violate the expected sex-role stereotype. Preferred children are those who show moderation in terms of misbehavior and sex-role standards. Quiet, shy children tend to be ignored.

Jackson (1968) describes the school environment as promoting obedience, compliance and docility. Patience and impulse control are valued traits in schools since children spend much time waiting, their desires are often denied, interruptions are frequent, and they are often distracted by peers. In order to maintain control in such a situation teachers resort to frequent behavior correction of those who do not conform and interact more often with these children in an attempt to keep them from being distracted.

It is not surprising that most of the children who are nonconforming and easily distracted are males. Research suggests that males are more aggressive than females (Maccoby & Jacklin, 1972) and engage in more rough and tumble play (White & Edwards, 1972). Males have also been found to cover more space in their play than do females (Harper &

Sanders, 1975). While such behavior is more tolerated in the preschool than in the elementary grades, it is nevertheless in conflict with school expectations of docility, compliance, and impulse control. Being less aggressive and less active, females do not require as much behavior correction and do not receive teacher initiations at as high rates as do males.

This discrepancy in teacher behavior takes its toll on both sexes. Males receive higher rates of teacher-child interaction, including competence encouragement and more of an effort is made to keep them involved in the activity at hand. These conditions can be expected to facilitate learning and independence. But, males are more often disliked by teachers and receive more disapproval. Thus, school may not be a very pleasant place for some of these children and they may come to think of themselves as not very likeable. It is certainly true that more males "turn off" to school in later years and drop out. Rates of anti-social behavior and law violation are also higher for males. Females, in contrast, are well liked by teachers but probably receive fewer learning opportunities. They are chosen by teachers as favorites, but receive lower rates of teacher initiation, including competence encouragement. Since females are less often disruptive, fewer attempts are made to engage their attention and they may be allowed to sit and daydream at school without learning. In addition, passive compliant behavior is doubly

reinforced in females since it is expected at school and is part of the female sex-role stereotype.

What can be suggested to ameliorate this socialization process so that males and females do not develop these deficity? Although the research necessary to provide the basis of any major policy decision is yet to be undertaken, several suggestions can be offered. First, smaller classes would minimize the amount of time children would have to spend waiting for their turns and would allow the teacher an opportunity to become familiar with each child individually and gear instruction to his or her needs. More diverse learning experiences could be provided that did not require children to be passive and compliant. Secondly, it is important for teachers to not only encourage diversity and cross-sex skills, but also model these behaviors. Active, enthusiastic teaching, regardless of what skills are being taught, has been found to be the most important determinant of learning (Weikart, 1969). In addition, males should be encouraged to pursue careers in early education. It is important for children to experience males encouraging and participating in a wide variety of behaviors. Finally, more effective methods of behavior control could be utilized. Reasonable limits can be clearly defined for classroom behavior and consistently enforced with specific consequences. Rather than verbal scoldings, attention could be given to children who cooperate instead of to those who misbehave. In this

way children can learn to control behavior without acquiring a negative self image, and less instructional time is spent in disciplinary proceedings.

In order to make more specific recommendations regarding sex-role learning and the educational process, much additional research is necessary. The present study is only the first step and has utilized fairly broad measures of teacher-child behavior. More precise measures of behavioral interactions must be obtained. However, both the strength and the weakness of naturalistic research lies in the inherent complexity of human behavior. Socialization processes cannot be understood without studying them as they occur naturally. But, great care must be taken in the methodology of future research so that conclusions drawn are not based on only one piece of the proverbial elephant.

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APPENDIX A

Teacher Questionnaire

TEACHER_____

SCHOOL_____

Please answer the following questions:

1. If you could keep several children another year just for the sheer joy of it, whom would you pick?

   1.

   2.

   3.

2. If a parent were to arrive unannounced for a conference, which children would you be least prepared to talk about?

   1.

   2.

   3.

3. If you could eliminate several children from your classroom, whom would you pick?

   1.

   2.

   3.

4. What situations or activities that children become involved in are the least pleasant for you?

   1.

   2.

   3.

5. What situations or activities are the most pleasant?

   1.

   2.

   3.

6. If you were going to take 3 children on a saturday afternoon trip (i.e. to the movies, carnival, etc...) whose company would you enjoy the most?

   1.

   2.

   3.

7. Imagine you were sick and a substitute teacher took your place for a day and the next day she said, "Three children drove me crazy." They were:

   1.

   2.

   3.

APPENDIX B

Activity Categories

ACTIVITY CATEGORIES

Category 1. Instructional and Art Activities: Traditional classroom instructional activities such as reading or writing lesson, science, colors and shapes etc... Arts and Crafts such as making puppets, mobiles, painting, working with clay. Activities included in this category were usually conducted while the children were sitting at a table receiving directions, instructions, and help from a teacher. In most instances, some type of performance criteria was applied to the child's efforts (e.g., there was a right way to do it). Also included in this category were puppet shows and plays where the child was expected to know and recite certain actions in a correct way (usually with much teacher prompting).

Category 2. Manipulative Toys and Special Equipment: This category included play with toys where the child's performance was a less important factor. Games, puzzles, flour table, tools, bean pool, sand box, and musical instruments were included in this category. More often these toys were used on the floor or standing up.

Category 3. Dramatic Play: This category included imaginative and fantasy play such as - dolls, dress-up, house, monsters, batman, spaceman, and wicked witch. Some classes had dress-up clothes, in other classes hats or role associated toys were used. Often there was much movement associated with this play.

Category 4. Snack: Each class had a snack period everyday. Usually the children sat around small tables, were served juice and crackers and had an opportunity to discuss the day's events and other topics of interest with the teacher.

Category 5. Grouptime: Most classes had a group period everyday. During this time the teacher made announcements, led group games, songs, and read stories. Children were expected to listen quietly or participate appropriately.

Category 6. Active Floor Play and Large Muscle Activities: This category included active play such as - blocks, trucks, bikes, swings, run and chase, etc... Usually this play was restricted to one area of the floor or outside.

Category 7. Transition and Undirected Activity: This category consisted of times when the child was not involved in an activity such as - cleaning up, dressing to go out, waiting in line, etc... Often the teacher was giving directions or helping prepare for the next event. Also included were times when the child did not choose to become involved in any of the available activities but merely wandered around or watched.

APPENDIX C

Interval Coding

INTERVAL CODING

Each child appearing on the tape, within the vicinity of the teacher (involved in the same activity as the teacher or within 5 feet) was rated during each 15 second interval. Information obtained included:

1) Activity the child was involved in (see activity categories).

2) Group size - based on the total number of children being rated for that interval.

   Number of children:

1. 1 - 2	individual attention
2. 3 - 5	small group
3. 6 - 9	medium group
4. 10 or more	large group

3) Child behavior

   a) cooperative - Attempts to cooperate; tries to do the right thing although she/he might be doing it wrong. Attempts to do what is expected without being disruptive or destractive.

   b) uncooperative - Does not attempt to cooperate. (Child probably knows his/her behavior is inappropriate). Includes: 1. interference with peers (pushing, hitting, name calling, fighting over materials or space). 2. destruction of property (kicking, throwing toys or furniture) 3. breaking established rules (yelling during quiet time, running indoors, climbing on furniture, etc...) 4. not following directions purposefully (runs away at clean-up time, talks while teacher gives lesson, disobeys rule that has just been stated)

APPENDIX D

Behavior Code

BEHAVIOR CODE

I. Teacher Initiates - Child Behavior
Code only if the teacher has initiated.

Behavior at time of initiation

1. Does not attempt to cooperate - (child probably knows his/her behavior is inappropriate). Includes:
   interference with peers - pushing, hitting, fighting over materials or space, calling names.
   destruction of property - kicking, throwing toys or furniture
   breaking of established rules - screaming during quiet time, climbing on furniture, etc.
   not following direction purposefully - runs away at clean up time, talking while teacher gives lesson, disobeys rule T has just stated.

2. Does attempt to cooperate - Tries to do the right thing although s/he might be doing it wrong. Attempts to do what is expected without disrupting or destroying, etc. Participates or does nothing at times when nothing is expected.

II. Child Initiates - Amount of Involvement Sought
Code only if the child initiates.

1. Minimal
   - Child makes statement. Gives information about what s/he knows, did, can do, thinks, etc.
   - Child asks question and answers it right away before T has a chance to say anything. "Do you know what I did yesterday- go to the store."
   - Child states desires or intentions without expecting or needing T permission. "I'm going to be a spaceman." (where permission is needed or could be denied it should be coded as .2, e.g., "I'm going outside now, OK?")

2. Moderate
   - Child tries to get teacher's attention. Does not continue without teacher attention - "Teacher, Teacher..." "You know what?", taps on shoulder until T notices, etc.
   - Asks question where information, not action, is sought. E.g., "Where are the scissors?" indicates information seeking while "Can I have the scissors?" indicates action seeking.
   - Makes statement which requires permission. States desire to do something that T has the power to refuse. "Let me do it." "I want to go out."
   - Tells to look.

3. Active
   - Requests T to do something. Asks for help. "Will you tie this?"
   - Non-verbal requests for help. Holds up necklace for T to tie on without saying anything.
   - Informs T of lack, need or problem. Expects T to do something about it (Whether or not T does). E.g., "I need scissors." "He hit me." "This broke." "She isn't cleaning up." (Tattling)
   - Directs teacher behavior. Tells T to do something. "Come here." "Lift me up." "You be the doctor."

III. Child Initiates - Intensity of Demand
Code only if child initiates.

1. Normal demand - Child makes statement or question, etc., without any of the extra attention getting devices listed below.

2. Strong demand - Child uses one or more of the following attention getting devices.
   - physical contact - climbs on T, taps on T, hits T, hugs T, uses any other physical means to engage T.
   - visual display - holds up object for T to see
   - stands up and leans - other children sit but this child stands up to speak, leans over table, etc.
   - repeats - says any part of a statement or question more than once within the same conversation. (Does not count if the child waits and repeats later as part of a new conversation).

IV. Child Initiates - Child Content
Code only if child initiates. Code only one of the following indicating that that is what the conversation is mostly about.

1. Gain attention - Recognition
   - child talks about self or activities. States desires, personal information.
   - tries to get T to participate or notice his activity.
   - gives greeting.

2. Avoid unpleasant task
   - primarily trying to avoid something. Protests, stalls, gives reason why s/he doesn't want to do it or shoudn't have to. States alternative desire.

3. Gain help
   - Child requests T to perform some service (other than supplying materials. If T has to prepare materials for the child this counts as help, e.g., "Will you cut me some string?"
   - informs T of lack, need, or problem expecting T to do something about it. "He hit me." "This broke." etc. "I can't do it."

4. Gain materials
   - child needs or wants some object, food, etc., informs T "I need scissors."

5. Gain information or knowledge or permission
   - Child needs to know answer. "Are we going out now?" "Can I do this?" "What is that you are wearing?"

6. Pro-social
   - child tries to help teacher or another child and gets recognition for it.
   - volunteers to perform some service for the teacher, "I will."
   - Teacher asks the group a question and child attempts to answer if (even if wrong as long as it was a sincere attempt.)
   - child provides useful information about the activity at hand or classroom procedure (not about self). E.g., "The rabbit got out." "John is standing on the table." "The blue one moves faster than the red one."

V. Teacher Behavior - Evaluation of Child
Code for every initiation.

1. Correction/direction - Child has already or is in the process of doing something which the T disapproves of.
   - child's behavior was performed incorrectly whether the child attempted to do it correctly or not (e.g., tries to wash dishes but gets water all over). T gives directions of correction to rectify situation.
   - error of omission. What was expected of the child has been clearly stated and the child failed to do it. E.g., T announces that its clean up time and later asks child why he isn't helping clean up.

2. Neutral - Either T does not try to influence or evaluate child behavior at all or T tries to influence future behavior without reference to the past.
   - T anticipates that child will do something wrong (but child has not done anything wrong yet) and reminds child of rule
   - child asks to do something which is not allowed and T says no.
   - T does not know what thechild intends to do but tells the child what he/she should do.
   - child has not done anything wrong but has given the wrong answer to a teacher's question or says something which is not correct. T corrects child and offers right information. Child demonstrates knowledge but does so incorrectly (e.g., has tied shoe wrong.).

3. Praise - T gives verbal approval of child's performance or appearance.
   - T makes statement which suggests that the child has set a good example.

- T compliments child or activity
- child demonstrates knowledge or performs act (does not give personal opinion) and T affirms that the child is right and or has performed well. E.g., "That's right." "That's good." "You did it." Gives feeling of accomplishment. (Uh huh or such comments do not count.)
- T takes extra notice of child's behavior or appearance in positive personal way. E.g., "You look like a princess." "Look what you made."

VI. Teacher Behavior - Attention Level
Code for every initiation.

1. No attention - T does not respond to child initiation
   - T makes no verbal response and any non-verbal behavior does not provide a complete response, e.g., child holds up item and says, "I made a hat," T looks and says nothing. If child merely says, "Look at this," and T looks then this should be counted as a complete response and coded under minimal attention.
   - T gives verbal response but it is not directed to the particular child. Response is either directed to someone else or to a group of children.
   - T gives verbal response but it is part of the next conversation. E.g., T has changed the subject and a new conversation has started.

   Do not code if:
   - child asks question and T responds yes or no by shaking head.
   - child makes request and T fulfills request non-verbally ("Tie this" and T does without saying anything)

2. Minimal attention - T gives verbal response to child of 2 sentences or less. T looks at child's work when child says "look what I made, etc." (If child made any other request or statement looking will not count as a sufficient response by itself.)

3. Conversation - T says 3 sentences or more. Run on sentences that begin with And are considered one sentence. Sentence must express a complete thought (can be one word if it expresses a complete thought). If it is borderline and you aren't sure code it as minimal attention.

4. T Performs act
   - T performs act non-verbally or with verbal statements, e.g., ties shoe, gives materials.
   - T performs act not requested by child, e.g., let me fix this for you.
   - T performs different act than the child requested. Child asks T to cut string but instead she hands him the scissors.
   - T attempts to perform act but is lacking something, e.g., tries to fix hat but needs tape (must make definite attempt, not just look at hat and say, "You need tape.").

- T says she/he will do it but you can't tell whether it is done or not because your view is obstructed, e.g., another child is in front of the camera.

Do not count:
- T participates in an activity along with the child but does not perform an act <u>for</u> the child, e.g., clean up T eventually cleans up what child was supposed to do.

- T performs the act requested but it gets counted during another conversation, e.g., T says he/she will tie shoe but gets distracted and doesn't do it until later when child asks again.

VII. Teacher Content
Code for every initiation.
Code teacher content as 1 of the following:

1. <u>Procedural</u>-T tries to influence child's behavior by giving direction or correcting behavior (unless instructional or helping).
   - gives reason why child should do something.
   - states rule or reminds child of rule.
   - asks question which is not about the child and is not instructional, e.g., "do you know where the tape is?"
   - gives materials, food, objects, etc... - merely hands them over, does not go to "help" the child find it. Does not cut string or do something for the child.
   - gives permission or denies request - may include reason
   - informs child of what is expected, e.g., "Now it is time to clean up."
   - gives information about classroom procedures, e.g., "Now we are making clocks."

2. <u>Encourage Competence - Give Instruction</u>
   - teaches child how to perform some act
   - tells child to try to do something him or herself
   - gives directions which enable child to do something by themselves (get something or make something)
   - ask instructional questions (question that T knows the answer to but wants the child to reason it out) e.g., which one is bigger. (Questions designed to direct or correct child behavior should be coded as procedural, e.g., "Where's your snowsuit?" "How are we supposed to act at quiet time?" T attempts to get child to do something by him or herself but ends up helping with it.

- T asks child to demonstrate ability, "Let's see if you can make an M." "How many words that start with R do you know?"
- T tries to get facts across. Explains some factual phenomenon. Teaches something.

3. Helps - performs an act for the child without attempting to get the child to do it by themselves first or without giving instructions which would enable child to do it themselves the next time.
   - prepares materials and gives to child, e.g., cuts string for child.
   - should be coded in the conversation where it first begins. If T continues working on child's paper hat while starting a new conversation, it should only be counted as helps during the first conversation.

4. Personal - statement or conversation where the topic is the child or the child's activity where no instruction, help, or direction is given. No matter how weak and uninterested the response sounds (e.g., all T says is "Oh"). If T does what child wants in dramatic play situation or participates in or shows interest in child's activity etc...

5. No content - T doesn't respond at all.

VIII. Child Response - code only if T initiates

1. Negative - child does not comply with directions, or complies after making negative remark, acting angry, protesting, stalling. Child rejects opportunity to play with teacher. Child has to be told more than once to do something (Score negative response to the first time he is told).

2. Neutral - Positive - Child's response does not indicate displeasure, compliance or non-compliance.

   Child complies with directions, follows teacher's suggestions, joins T's activity, performs some act which T suggests. Accepts help, uses materials which T gives to child (e.g., does not leave them untouched). If child simply answeres a teacher's question but does not actively do something to indicate compliance then score it as neutral.

Addendum To Behavior Code

1. Child behavior at the time of teacher initiation:
   - If the child is attempting to cooperate even if criticized by the teacher later it's counted as a 2.

2. Child initiates - amount of involvement sought:
   - additional instances of moderate (2) include "I don't want to ___." "I want to ___." statements that begin with "Where ..." if all child wants is information (In some cases the child really wants the T to help, e.g., "Where does this puzzle piece go?" while trying to complete puzzle).
   - additional instances of active (3) include "This doesn't go here." "This doesn't go around." (expects teacher to do something about it).

3. Intensity of demand:
   - strong demand: if child is already in T's lap when statement is initiated this doesn't count as physical contact.
   - visual display: child must clearly hold up an object. Pointing to something doesn't count. Must be showing T, not just looking at it himself.
   - stands up and leans: doesn't count if child was already standing up before he starts to speak unless he noticeably leans over to make his point more strongly. Doesn't count if child gets up and walks over to T.

4. Child content
   - Gain attention: child attempts to gain an opportunity e.g., "I want to go first." child tries to get attention by pointing out his/her accomplishment "I did it." teacher talks to group and child calls out unsolicited information to demonstrate how much he/she knows or child volunteers information when T has already called on somebody else or child makes irrelevant or redundant response to teacher statement or question to get attention (e.g., teacher asks "Who did ___?" child volunteers "I didn't." teacher says "Here are two trains." child says "Two trains!" etc...)

   - Gain help: child states lack or problem such as "I don't know where this puzzle piece goes." (wants teacher to help with puzzle, not just give information) "These don't go around." or "This doesn't go here." child wants T to help.

- Gain information or permission: Child wants to know if he is allowed to do this or makes statement which requires permission "I want to take this home." If child wants to be chosen for an activity (e.g., teacher "Who wants to paint?" child "I want to.") this is considered attention.

- Pro-social: T gives lesson or story to group. Asks question or waits for kids to volunteer information. If child volunteers information it is pro-social. (e.g., teacher: "What is this?" Child: "A house." (even if child gives wrong answer he has made a sincere attempt) or teacher: "This is a ..." (waits for child response) child: "truck.")

5. Teacher Evaluation of Child
   - Correction/direction: it is obvious that the child is doing something that the teacher doesn't like and the teacher suggests something as a distraction. e.g., why don't you come over here and do this (child is over in corner fighting) child dawdles, T says "Are you coming?" T says "Did you do____?"
   - neutral: T makes statement about child but without any suggestion of direction e.g., "Your mouth is all blue." gives no indication that anything should be done.
     Child tries to learn how to do something but doesn't do it correctly (e.g., tries to tie shoe) and T corrects him. "No not that way, do this." Is teaching child something. Child gives wrong answer and T supplies correct information.

   - Praise: doesn't count if T is complimenting another child's work. Statements like "Yeah" or "Uh huh" or "Yep" or repeating the child "Yeah, a train" do not count. If T says "Right" or "Good" etc... it counts. Be sure to notice if this occurs during any part of the conversation.

6. Attention Level
   - no attention: If the T initiates, then statement cannot be coded as no attention because T has given some attention.

   - conversation: Single words such as "O.K." or "Yeah" or "Alright" don't count as sentences unless they are not followed by anything else. e.g., teacher: "Yeah. Well, I think we should..." Would be counted as one sentence. If teacher said "Yeah" then the child spoke next, then the teacher said "Well, I think we should..." it would be counted as 2 sentences. Stating child's name doesn't count as a sentence unless it occurs by itself.

- T performs act: pointing doesn't count. If T offers materials this should be counted. Or if T engages in play with the child.

7. Teacher Content
   - procedural: child gets compliment for following the procedure. Child dawdles and T has to restate invitation. e.g., "Are you going to do___?" T gives information about what they will do or not do today.

   - demonstrate competence/give instructions: Child gets compliment for giving the right answer or giving a good performance, e.g., ties shoe etc... T tells child he was "Right" etc... or "Wrong" etc... T asks child to demonstrate ability "Let's see if you can..." (If T is only trying to get the child to do a procedural task, e.g., wipe off the table this is procedural).

   - helps: T prepares materials for child, e.g., cuts string, threads needle etc... something the child might be expected to do or attempt himself. If T gives materials without preparation such as hands pencil, plate, cookies etc... this is procedural.

   - personal: T invites child to join fun activity whether the child joins it or not. Gives apology "Excuse me". Gives personal compliment "That's a nice little house you're making" (if T compliments child's abilities then its competence, e.g., you know how to read well"). T greets child. T offers suggestion on child's activity without teaching "Why don't you use some of these blocks" Asks question about child's activity "What one are you looking for?"

   Conversations where there is clearly more than one area of content should be coded as follows:
   1. If there is any Competence/instruction content code it as this category, regardless of what else there is.
   2. If there is helping and anything else (except competence-instruction, see above) code it as helping.
   3. If there is personal and anything else (except competence-instruction or helping) code it as personal.
   4. Do not code little or no content if there is even a small amount of content.

8. Child Response
   1. Negative: Child doesn't stop bad behavior until T forcibly intervenes. Child doesn't answer question to which T expects an answer. Child is invited to join teacher's

activity and doesn't join (unless he gives a good reason such as "I've already done that"). Child has to be told more than once to do something.

2. Neutral-positive Child does not show negative behavior. Stops doing what T disapproves of. You can't tell whether child complies with directions or not (if he clearly doesn't comply it is a negative response).

CODING SAMPLES

Conversation 1

Rick: I'm pretty heavy, aren't I? (Rick holds T's hand.)
T: You are.
Rick: Do you know why?
T: Why?
Rick: I weigh pretty close to 60 (lbs.).

Child initiation: Amount of involvement sought - moderate
Intensity - normal
Content - seek attention

Teacher Response: Evaluation - neutral
Attention level - Level 2 (more than two sentences)
Content - personal

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Conversation 2

(David stands on the table.)
T: Off the table, David, O.K. (David reaches out for T to pick him up.)

Teacher initiation: Child behavior at the time - noncooperation
Evaluation - correction
Attention level - minimal
Content - procedural

Child response: Neutral-positive

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Conversation 3

David: Pick me up again. (T does) No, not that high.
T: (Groan)...(Groan)
David: Now, keep me there forever.
T: Forever? I don't know if I can hold anybody that long. . .
David: Until you die.
T: (Groans)
David: That's a long, long. . .

Child initiation: Amount of involvement sought - active
Intensity - normal
Content - seek attention

Conversation 3 (cont.)

Teacher response: Evaluation - neutral
Attention level - performs act
Content - personal

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Conversation 4

Robbie: Teacher! He needs some. . . He needs some. . .
T: What does he need?
Robbie: He needs you, quick. (T walks over to table.)

Child initiation: Amount of involvement sought - active
Intensity - strong
Content - prosocial

Teacher Response: Evaluation - neutral
Attention level - Active
Content - procedural

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Conversation 5

T: Do you know what a weed is? (Penny shakes her head, no.) It is a plant that grows in the garden that you don't want.
Penny: Oh!
T: Have you ever seen your mommy or daddy pull weeds out where the flowers are? The part that you don't want, the extra grass and weeds, that aren't flowers and you weed.

Teacher initiation: Child behavior - cooperation
Evaluation - neutral
Attention level - more than two sentences
Content - competence encouragement

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Conversation 6

Suzy: Can we have a tea party?
T: Yea! In a little bit, not right away; a little bit later you can have your tea party.

Child initiation: Amount of involvement sought - moderate
Intensity of demand - normal
Content - seeks information

Teacher response: Evaluation - neutral
Attention level - two sentences or less
Content - procedural

Conversation 7

Christine: Can you fix my shoes? (Sticks out foot and T fixes it.)

Child initiation: Amount of involvement sought - active
Intensity of demand - strong
Content - seeks help

Teacher Response: Evaluation - neutral
Attention level - performs act
Content - helping

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Conversation 8

Eric: Can I have a flag? I want a flag, too.
T: (No response.)

Child initiation: Amount of involvement sought - active
Intensity of demand - normal
Content - seeks materials

Teacher response: Evaluation - neutral
Attention level - no attention
Content - Little or no content

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Conversation 9

T: Do you need help with this, Penny? (Still having trouble with her shoes.)
Penny: I forgot how my mommy did it.
T: (Gets them on for Penny.) There you go! Okay.

Teacher initiation: Child behavior - cooperation
Evaluation - neutral
Attention level - performs act
Content - helping

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Conversation 10

T: It's your turn now, Suzy? Okay.

Teacher initiation: Child behavior - cooperation
Evaluation - neutral
Attention level - two sentences or less
Content - procedural

APPENDIX E

Conversation Criteria

CONVERSATION CRITERIA

A conversation was defined as a series of exchanges between one teacher and child focusing on one topic. The following guidelines were used to divide dialogue into conversational units:

1. All statements in a conversation were between the same teacher and child.

2. A new conversation was coded when either participant introduced new unrelated material.

3. A new conversation was coded when the focus of the conversation was shifted from a general discussion to the stating of a rule (e.g., child tells T she/he is pretending to be a witch. T tells child that witches had better not run in the classroom).

4. Non-consequtive statements were coded as part of the same conversation if:
   A) conversation was interrupted by another teacher or child and resumed where it left off in less than two minutes.
   B) statements were part of a continuous attempt to get the teacher's attention and were separated by less than two minutes.

CONVERSATION SAMPLES

Conversation 1

T_1: (Turns back to Vicky.) "OK, look at this, where would that go?" (Vicky puts it in puzzle.)
T_1: "Uh huh." (She picks up another piece.)

Conversation 2 (Same child, new content)

T_1: "Oh, I think I know where that goes - right here." (She puts it down.) "I'm helping you now because we have to go. Normally you could. . ."

Conversation 3

Stacy: "Where are we going?"
T_1: "We're gonna look at the fair."
Stacy: "Oh, I forgot that. Look at the fair!" (Peter and Stacy talk about the fair.)

Conversation 4

T_1: (Picks up another piece.) "Where would this go?" (Vicky looks.) (T_2 instructs T_1 to have children leave puzzles and go.)

Conversation 5

(Children are sitting at table with teacher, making puzzles. T_2 calls to Dave R.)
T_2: "You put it on the shelf, and then I'll tell you what I want you to do."

Conversation 6

(T_2 turns to Keith beside her.)
T_2: "Turn it, keep turning it, turn it." (Keith turns piece.)

Conversation 5 (Continued)

(Dave R. walks to T_2.)
T_2: "No, I said shelf. Put it back on the shelf." (Dave R. turns and goes back.) (Dave R. comes back to T_2)

T_2: "Now this is what I want you to do, will you pick up that tray and put it on the kitchen table out there?" (Dave R. walks off, gets tray.)
T_2: "Now it could be you could put it on that little white table if there's enough space." (Dave R. walks back into kitchen.)

Conversation 7

(T_2 turns to Keith.)
T_2: "Look, don't force it, just ease it around gently like this. See, it really fits there. Now I think it does, I don't know. No, I think you'll have to keep turning it like this until it suddenly fits in right." (She turns it and Keith watches.)
T_2: "You'll just have to keep turning it 'til it seems to fit the best way."
Keith: "There."
T_2: "There, I think that's. . ."

Conversation 8

(Dave R. comes over to T_2 and leans on table.)
T_2: "David, would you like me to tell you that in the gerbil room is a piece of cardboard with all different kinds of roads on it that you can build on them, and you take little tiny weeny cars to use with it."
T_2: "Now you may go in there (Dave walks off) but we're trying to keep the door shut so the dog won't go in there."

Conversation 9 (Same child, new content)

T_2: "David, David, would you come back here. David, I'm still talking to you. Come back here. Come here!" (David comes back.) "We're trying to keep the door shut so the dog won't go in to the gerbil. Now if you want, and you need it, you may take in some of these little people and these houses to have on the road."
David R.: "I'll put in (?)"
T_2: "All right." (David leaves.)

Conversation 10

(T_2 turns back to Keith.)
T_2: "This is colored the right color of a piece that's supposed to go there." (Keith puts piece in.) "That's right. Miss Strong should color this orange, and then you'd know, too."

APPENDIX F

Statistical Tables

TABLE 2

Behavioral Code Reliability

A. Reliability obtained on first two ½ hour tapes before category clarification

Coder	Child Cooperation	Involvement Sought	Intensity of Demand	Child Content	Teacher Evaluation	Teacher Attention	Teacher Content	Child Response
B	.91	.73	.82	.67	.81	.74	.72	.93
K	.90	.70	.76	.74	.87	.78	.68	.87
C	.95	.78	.84	.66	.85	.79	.76	.92
S	.87	.80	.89	.71	.85	.83	.82	.89
R	.87	.70	.77	.82	.87	.84	.72	.92
T	.89	.71	.76	.81	.87	.81	.76	.93
A	.91	.83	.80	.81	.90	.89	.84	.82
J	.82	.60	.60	.84	.81	.76	.77	.77
D	.87	.68	.79	.86	.88	.84	.74	.92
$\bar{X}$	.89	.73	.78	.77	.86	.81	.76	.89

TABLE 2
(Continued)

B. Reliability obtained on first two ½ hour tapes <u>after</u> category clarification

Coder	Child Cooperation	Involvement Sought	Intensity of Demand	Child Content	Teacher Evaluation	Teacher Attention	Teacher Content	Child Response
B	.91	.77	.87	.70	.81	.74	.74	.93
K	.90	.79	.85	.75	.87	.78	.74	.87
C	.95	.81	.85	.72	.85	.79	.79	.92
S	.87	.82	.89	.72	.85	.83	.80	.89
R	.87	.72	.76	.86	.87	.84	.75	.92
T	.89	.70	.79	.81	.87	.81	.78	.93
A	.91	.98	.90	.96	.90	.89	.90	.88
J	.87	.75	.80	.80	.91	.81	.78	.77
D	.87	.73	.79	.86	.88	.84	.74	.92
$\overline{X}$	.89	.78	.83	.80	.87	.81	.78	.89

TABLE 2
(Continued)

C. Reliability obtained by coding approximately 10% of each remaining tape (percentages reflect agreement between the experimenter and each coder).*

Coder	Child Cooperation	Involvement Sought	Intensity of Demand	Child Content	Teacher Evaluation	Teacher Attention	Teacher Content	Child Response
B	.91	.80	.87	.87	.89	.77	.70	.91
K	100	.85	.76	.89	100	.74	.71	.89
C	.91	.73	.84	.73	.95	.88	.91	.94
S	.98	.72	.92	.80	.94	.83	.75	.98
R	.94	.82	.94	.74	.85	.82	.77	.95
A	.91	.75	.70	.75	.92	.75	.71	.79
J	.87	.79	.95	.82	.90	.82	.76	.94
D	.83	.70	.83	.77	.95	.78	.85	.90
$\overline{X}$	.92	.77	.85	.80	.93	.80	.77	.91

*Actual reliability of coded tapes is somewhat higher than these figures suggest since in any instances where reliability fell below .70, the coder was asked to recode that tape. The increases in agreement following such recoding are not included in the above figures.

TABLE 3

Distribution of Children's Time in Preschool: Males vs Females

	Median Range: Schools*	Above Median F	Above Median M	Median & Below F	Median & Below M	X^2	P
Time Present During Observation Period	3.0-6.0 hours	32	26	24	40	3.82	.10
Time Recorded on Tape	1.2-3.0 hours	29	29	27	37	.74	-
Percentage of Time Recorded on Tape	21%-57%	25.5	32.5	30.5	33.5	.17	-
Percentage of Time Away from Teachers	33%-69%	17	41	39	25	12.26	.001
Percentage of Time in Group Size 1	.04%-15%	25	32	31	34	.18	-
Percentage of Time in Group Size 2	13%-37%	27	31	29	35	.02	-
Percentage of Time in Group Size 3	9%-37%	29	29	27	37	.74	-
Percentage of Time in Group Size 4	35%-75%	22	36	34	30	2.83	.10

*The median range is based on the median values of a given variable for the six schools. The lowest and the highest of the six school medians are presented in order to give the reader an indication of the magnitude of that particular variable, and an indication of differences between preschools.

TABLE 4

Children's Activity Choices

Activities Ranked on Proportion of Time Spent in Each Activity Category

Females	Median Range: Schools	Sum of Ranks: Schools	Overall Rank*	Friedman's 2-Way ANOVA X^2	P
Activity:					
Category 1	14% - 36%	12	1		
Category 2	6% - 23%	26	4		
Category 3	0% - 21%	32	7		
Category 4	7% - 23%	26.5	5		
Category 5	6% - 19%	25	3		
Category 6	2% - 19%	30	6		
Category 7	8% - 21%	16.5	2	12.35 (df=6)	.06
Males					
Activity:					
Category 1	6% - 34%	18	2		
Category 2	3% - 25%	26.5	6		
Category 3	0% - 8%	42	7		
Category 4	6% - 21%	25	5		
Category 5	7% - 19%	22.5	4		
Category 6	8% - 41%	20.5	3		
Category 7	7% - 21%	13.5	1	18.86 (df=6)	.01

*Overall rank gives the order of preference after data from the six schools have been pooled. Lower ranks indicate greater preference.

TABLE 5

Sex Differences in Percentage of Time Spent in Each Activity Category

Percentage of Time:	Median Range: Schools	Above Median F	Above Median M	Median & Below F	Median & Below M	X^2	P
Activity Category 1	8%-35%	38	20	18	46	17.13	.001
Activity Category 2	8%-25%	21.5	36.5	34.5	29.5	3.47	.10
Activity Category 3	.03%-16%	29	29	27	37	.74	-
Activity Category 4	.5%-23%	27	31	29	35	.02	-
Activity Category 5	4%-17%	28	30	28	36	.47	-
Activity Category 6	7%-19%	14.5	43.5	41.5	22.5	29.70	.001
Activity Category 7	2%-21%	24	36	32	30	1.60	-

TABLE 6

Percentage of Time Males and Females Spent in Activities
Teacher Present and Teacher Absent

	Median Range: Schools	Above Median F	Above Median M	Median & Below F	Median & Below M	X^2	P
Teacher Absent:							
Activity							
Category 1	1.6%- 7%	38.5	19.5	17.5	46.5	18.67	.001
Category 6	4%-24%	15.5	42.5	40.5	23.5	16.37	.001
Category 7	6%-17%	19.5	38.5	36.5	27.5	6.72	.01
Teacher Present:							
Activity							
Category 1	6%-20%	36	22	20	44	21.09	.001
Category 6	0%- 6%	20	38	39	29	5.80	.025
Category 7	2%-23%	29	29	27	37	.74	-

TABLE 7

Activity Category and Rate per hour of Teacher - Child Interaction

Interaction Rate (N per hour)	Median Range: Schools	Sum of Ranks	Overall Rank	Friedman's 2-Way ANOVA X^2	P
Category 1	60 - 191	26	4.5		
Category 2	30 - *	29	7		
Category 3	0 - *	24	3		
Category 4	57 - 264	19	2		
Category 5	48 - *	28	6		
Category 6	73 - 418	26	4.5		
Category 7	106 - 330	16	1	4.87 (df=6)	-

*In some schools teachers spent little or no time in these activities. Teacher-child interactions occurred while the teacher and child were engaged in different activities and were categorized according to the activity the child was engaging in.

TABLE 8

Teacher's Activity Preferences from Questionnaire

Activity	Pleasant (N Teachers)	Unpleasant (N Teachers)	Difference Score
Category 1	15	1	+14
Category 2	7	4	+ 3
Category 3	7	7	0
Category 4	3	3	0
Category 5	2	3	- 1
Category 6	3	8	- 5
Category 7	1	11	-10

TABLE 9

Teacher's Distribution of Time According to Activity Category

Time Spent During Observation Period	Median Range: Schools	Sum of Ranks	Overall Rank	Friedman's 2-Way ANOVA X^2	P
Category 1 (hours)	.30 - 1.8	7	1		
Category 2	.20 - .7	24	4		
Category 3	.00 - .3	36	7		
Category 4	.16 - .7	23	3		
Category 5	.07 - .62	26	5		
Category 6	.05 - .50	33	6		
Category 7	.16 - .66	19	2	20.74 (df=6)	.01
Time Recorded on Tape					
Category 1 (hours)	.66 - 3.55	10	1		
Category 2	.00 - 1.40	23	2		
Category 3	.00 - .65	33	7		
Category 4	.39 - .61	26	5		
Category 5	.15 - .90	25	3.5		
Category 6	.11 - .72	27	6		
Category 7	.20 - .95	25	3.5	13.40 (df=6)	.05

TABLE 10

Rate per hour of Teacher Praise* During Activities Chosen by Females and Activities Chosen by Males

(Wilcox Matched Pairs Test)

Schools	Chosen by Females (Category 1)	Chosen by Males (Category 6)	Difference	Rank	T	P
A	24.9	8.2	16.7	4		
B	49.3	21.3	28.0	5		
C	7.4	12.5	-5.1	-1		
D	28.8	19.4	9.4	3		
E	28.3	23.7	8.9	2		
F	34.7	90.9	-56.2	-6	7	-

Schools	(Category 1)	(Category 7)	Difference	Rank	T	P
A	24.9	35.8	-10.9	-4		
B	49.3	24.4	24.9	6		
C	7.4	13.2	-5.8	-1		
D	28.8	21.3	7.5	2		
E	28.3	15.0	13.3	5		
F	34.7	44.4	-9.7	-3	8	-

*Rate of praise is based on praise given during any conversation regardless of whether the initiator is teacher or child, male or female.

TABLE 11

Rate per hour of Behavior Correction During Activities Chosen by Females and Activities Chosen by Males

(Wilcox Matched Pairs Test)

Schools	Chosen by Females (Category 1)	Chosen by Males (Category 6)	Difference	Rank	T	P
A	5.7	20.4	-14.7	-3		
B	28.0	13.0	15.0	4		
C	1.1	9.4	-8.3	-2		
D	18.2	12.5	5.7	1		
E	15.0	86.8	-71.8	-6		
F	4.7	72.7	-68.0	-5	5	-

Schools	(Category 1)	(Category 7)	Difference	Rank	T	P
A	5.7	56.8	-51.1	-5		
B	28.0	8.9	19.1	1		
C	1.1	47.2	-46.1	-4		
D	18.2	45.7	-27.5	-2		
E	15.0	270.0	-255.0	-6		
F	4.7	33.3	-28.6	-3	1	-

*Rate of behavior correction is based on behavior correction given during any conversation regardless of whether the initiator is teacher or child, male or female.

TABLE 12

Rate per hour of Praise and Behavior Correction Given to Males and Females During Female Preferred Activities and Male Preferred Activities

Rate of Praise

Activity	Male or Female Preferred	Median Range: Schools	Above Median F	Above Median M	Median & Below F	Median & Below M	X^2	P
Category 1	F	0 - 19	28	24	28	34	1.00	-
Category 6	M	0 - 2	13	18	29	40	.00	-
Category 7	M	0 - 7	21	23	35	40	.01	-

Rate of Behavior Correction

Activity								
Category 1	F	0 - 3	15	27	41	32	4.46	.05
Category 6	M	0 - 7	7	23	35	35	6.13	.025
Category 7	M	0 - 20	22.5	30.5	33.5	32.5	.81	-

TABLE 13

Rate per hour* of Praise and Behavior Correction for Males and Females

	Median Range: Schools	Above Median		Median & Below			
Praise		F	M	F	M	X^2	P
Overall rate	86.0-283.0	31	27	25	39	2.54	-
Procedural	.2- 50.0	20	17	36	49	1.42	-
Competence	.4-330.0	25.5	29.5	30.5	40.5	.02	-
Helping	.0- 2.0	10	4	46	62	4.15	.025
Personal	2.0- 82.0	25	26	31	40	.34	-
Behavior Correction							
Overall rate	65.0-266.0	20	38	36	28	5.80	.025
Procedural	155.0-259.0	17	41	39	25	12.26	.001
Competence	.2- 2.0	7	9	49	57	.03	-
Helping	.0- .7	1	2	55	64	.20	-
Personal	.1- 2.0	4	19	52	47	9.23	.005

*Rates are based on child initiated conversations and teacher initiated conversations combined.

TABLE 14

Misbehavior Effects: Time Spent Misbehaving for Males and Females and Rate of Teacher Initiation

	Median Range: Schools	Above Median F	Above Median M	Median & Below F	Median & Below M	X^2	P
Percentage of Time Spent Misbehaving	.7% -3.2%	13	45	43	21	24.60	.001
Rage per hour of Teacher Response to Misbehavior	60 - 148	26	32	30	34	.05	-

Comparison of Teacher Initiation (Rate per hour) During Misbehavior and Cooperative Behavior (Wilcox Mathced Pairs Test)

Schools	Misbehavior	Cooperation	Difference	Rank	T	P
A	60.0	9.9	50.1	2		
B	100.0	17.9	82.1	5		
C	60.0	11.8	48.2	1		
D	90.0	25.1	64.9	4		
E	148.9	11.5	137.4	6		
F	100.0	39.0	61.0	3	0	.05

TABLE 15

Content of Teacher Initiations During Misbehavior: Males vs Females

Percentage of Teacher Initiations of Each Type	Median Range: Schools	Above Median F	Above Median M	Median & Below F	Median & Below M	X^2	P
Procedural	100 - 100	31	37	18	23	.03	-
Competence *	.0 - .0	8	7	41	53	.49	-
Helping *	.0 - .0	0	1	48	59	.84	-
Personal *	.0 - .0	11	19	38	41	.80	-
Attention Level 1: Two Sentences or Less	60.0 - 81.8	26	27	23	33	.70	-
Attention Level 2: More Than Two Sentences	6.0 - 30.0	26	27	23	33	.70	-
Attention Level 3: Teacher Performs Act	.0 - .1	5	18	38	41	6.35	.025
Behavior Correction: Overall	76.9 - 99.7	26	34	21.5	59.5	.06	-
Two Sentences or Less	66.0 - 100	29	25	20	35	27.14	.001
More Than Two Sentences	.1 - 30.0	19	32	30	28	3.31	.10
Teacher Performs Act	.0 - .0	3	16	46	44	7.91	.005

*In these analyses many Ss had scores of zero. The chi square test compared the number of males and females with scores above zero with males and females who had scores of zero.

TABLE 16

Content of Teacher Initiations During Cooperation: Males vs Females

Teacher Initiations of Each Type	Median Range: Schools	Above Median F	Above Median M	Median & Below F	Median & Below M	X^2	P
Overall (rate per hour)	9.9 - 39.0	19	39	37	27	7.69	.01
Procedural (rate per hour)	3.6 - 14.9	22	36	34	30	2.83	.10
2 sentences or less (%)	57% - 79%	31	27	25	39	2.55	-
More than 2 sentences (%)	6% - 31%	21	37	35	29	4.18	.05
Teacher performs act (%)	0% - 22%	25	32	31	34	1.75	-
Competence (rate per hour)	1.4 - 9.5	21	37	35	29	4.18	.05
2 sentences or less (%)	34% - 79%	22	31	28	26	1.29	-
More than 2 sentences (%)	.2% - 36%	25	27	25	30	1.15	-
Teacher performs act (%)	.3% - 20%	25	22	25	35	1.41	-
Helping (rate per hour)	0 - 1.0	28	23	28	43	2.86	.10
2 sentences or less (%)	0% - 7%	5	8	31	26	1.07	-
More than 2 sentences (%)	0% - 3%	1	1	35	33	.01	-
Teacher performs act (%)	75% - 99%	25	22	11	12	.18	-
Personal (rate per hour)	2.1 - 10.4	24	34	32	32	.91	-
2 sentences or less (%)	66% - 88%	32	23	22	39	5.68	.025
More than 2 sentences (%)	.8% - 20%	24	31	30	31	.36	-
Teacher performs act (%)	.2% - 10%	11	24	43	38	4.60	.05
Negative Child Response to Teacher Initiation (%)	3.2% - 8.3%	23	35	33	31	1.74	-

TABLE 17

Content of Child Initiations: Males vs Females

Type of Interaction	Median Range: Schools	Above Median F	Above Median M	Median & Below F	Median & Below M	X^2	P
Overall (rate per hour)	10.4 - 20.9	24	34	32	32	.91	-
Seek Attention							
Rate per hour	5.3 - 12.4	25	33	31	33	.35	-
Percentage of total	43% - 61%	27	31	29	35	.02	-
Avoidance							
Rate per hour	0 - 3.8	6	17	50	49	4.48	.05
Percentage of total	0 % - .1%	6	17	50	49	4.48	.05
Seek Help							
Rate per hour	0 - 3.4	29	28	27	38	1.01	-
Percentage of total	.1% - 19%	31	26	25	40	3.10	.10
Gain Materials							
Rate per hour	.6 - 1.8	25	33	31	33	.35	-
Percentage of total	5.0% - 7.0%	25	33	31	33	.35	-
Gain Information							
Rate per hour	2.1 - 8.0	25	33	31	33	.35	-
Percentage of total	12% - 32%	25	33	31	33	.35	-
Prosocial							
Rate per hour	.7 - 2.0	24	34	32	32	.91	-
Percentage of total	3.0% - 9.0%	25	33	31	33	.35	-

TABLE 18

Child Initiations with Extra Attention Getting Behaviors: Males vs Females

Percentage of Child Initiations Where Extra Attention Getting Behaviors Were Used	Median Range: Schools	Above Median F	Above Median M	Median & Below F	Median & Below M	X^2	P
Overall	7% - 30%	26	22	30	44	2.17	-
Seek Attention	8% - 29%	34	24	22	42	7.20	.01
Avoidance	0% - 33%	2	4	4	13	1.02	-
Seek Help	5% - 34%	22.5	20.5	20.5	31.5	1.58	-
Gain Materials	1% - 33%	20	20	23	30	.58	-
Gain Information	.4% - 30%	26	22	26	37	.86	-
Prosocial	.4% - 32%	13.5	13.5	31.5	31.5	.00	-

TABLE 19

Child Initiations: Amount of Teacher Involvement Sought by Males and Females

Percentage of Child Initiations of Each Type	Median Range: Schools	Above Median F	Above Median M	Median & Below F	Median & Below M	X^2	P
Minimal (makes statement)	26% - 49%	24	34	32	32	.91	-
Moderate (asks question)	32% - 50%	28	30	28	36	.47	-
Action (requests teacher action)	11% - 23%	27	31	29	35	.02	-

TABLE 20

Child Initiations: Content of Teacher Response Received by Males and Females

Teacher Response Received (rate per hour)	Median Range: Schools	Above Median F	Above Median M	Median & Below F	Median & Below M	X^2	P
Procedural	2.5 - 6.6	23	35	33	31	1.74	-
Competence	1.1 - 2.4	27	31	29	37	.02	-
Helping	.1 - 5.4	29	26	27	40	1.88	-
Personal	8.0 - 2.5	25	33	31	35	.35	-
No Response	1.6 - 7.6	20	38	36	30	5.80	.025

TABLE 21

Content of Teacher Response Received According to Content of Child Initiation: Males vs Females

Content of Child Initiation and Percentage of Teacher Response Received of Each Type	Median Range: Schools	Above Median F	Above Median M	Median & Below F	Median & Below M	X^2	P
Child Seeks Attention:							
Procedural response	13% - 20%	23	35	33	31	1.74	-
Competence response	6% - 10%	23	35	33	31	1.74	-
Helping response	0% - 0%	8	6	48	60	.80	-
Personal response	33% - 46%	28	30	28	36	.25	-
No response	21% - 30%	27	31	29	35	.02	-
Child Avoidance:							
Procedural response	33% - 89%	4	7	2	10	2.40*	-
Competence response	0% - 50%	0	2	6	15	.00*	-
Helping response	0% - 13%	0	1	6	16	.31*	-
Personal response	0% - 25%	2	1	4	16	5.86*	.025
No response	0% - 33%	1	3	5	14	.33*	-
Child Seeks Help:							
Procedural response	2% - 37%	18	27	25	25	.95	-
Competence response	1% - 4%	16	20	27	32	.02	-
Helping response	1% - 44%	25	19	18	33	4.42	.05
Personal response	0% - 25%	18.5	24.5	16.5	35.5	1.28	-
No response	0% - 9%	16	15	27	37	.75	-

*Yates correction for small frequencies was used.

TABLE 21
(Continued)

Content of Child Initiation and Percentage of Teacher Response Received of Each Type	Median Range: Schools	Above Median F	Above Median M	Median & Below F	Median & Below M	X^2	P
Child Seeks Materials:							
Procedural response	4% - 51%	20	25	23	25	.11	-
Competence response	0% - 2%	10	10	33	40	.15	-
Helping response	0% - 14%	12	14	31	36	.00	-
Personal response	1% - 21%	15	18	28	32	.01	-
No response	1% - 30%	14	15	29	35	.07	-
Child Seeks Information:							
Procedural response	25% - 51%	21	32	31	27	2.13	-
Competence response	0% - 20%	25	27	27	32	.06	-
Helping response	0% - 2%	6	4	46	55	.76	-
Personal response	13% - 28%	29	24	23	35	2.52	-
No response	0% - 15%	18	29	34	30	2.40	-
Child Prosocial:							
Procedural response	1% - 43%	17	19	28	26	.19	-
Competence response	0% - 17%	13	15	32	30	.21	-
Helping response	0% - 6%	1	1	44	44	.00	-
Personal response	2% - 46%	20	23	25	22	.40	-
No response	1% - 26%	19	23	26	22	.72	-

TABLE 22

Child Initiations: Level of Teacher Attention Received

Content of Child Initiation and Percentage of Teacher Responses at Each Level	Median Range: Schools	Above Median F	Above Median M	Median & Below F	Median & Below M	X^2	P
Overall:							
Level 1*	42% - 63%	31.5	26.5	24.5	39.5	3.15	.10
Level 2*	10% - 18%	21.5	36.5	34.5	29.5	3.47	.10
Level 3*	3% - 17%	30.5	27.5	25.5	38.5	1.98	-
Child Seeks Attention:							
Level 1	54% - 60%	28	30	28	36	.47	-
Level 2	3% - 18%	24	34	32	32	.28	-
Level 3	0% - 4%	22.5	23.5	33.5	42.5	.04	-
Child Avoidance:							
Level 1	17% -100%	4	8	2	9	.00**	-
Level 2	0% - 33%	1	4	6	13	.00**	-
Level 3	0% - 13%	0	1	6	16	.00**	-
Child Seeks Help:							
Level 1	22% - 49%	24	24	19	28	.88	-
Level 2	1% - 28%	13	23	30	29	1.96	-
Level 3	1% - 50%	24	22	19	30	1.72	-

*Level 1: Two sentences or less
*Level 2: More than two sentences
*Level 3: Teacher performs act
**Yates correction for small frequencies was used.

TABLE 22
(Continued)

Content of Child Initiation and Percentage of Teacher Responses at Each Level	Median Range: Schools	Above Median F	Above Median M	Median & Below F	Median & Below M	X^2	P
Child Seeks Materials:							
Level 1	3% - 49%	21	26	22	24	.09	-
Level 2	1% - 4%	7	14	36	36	1.82	-
Level 3	3% - 51%	16.5	23.5	26.5	26.5	.70	-
Child Seeks Information:							
Level 1	56% - 71%	24	30	28	22	1.39	-
Level 2	1% - 20%	25	27	27	32	.06	-
Level 3	0% - 8%	13	12	39	47	.34	-
Child Prosocial:							
Level 1	51% - 69%	25	19	20	26	1.60	-
Level 2	1% - 2%	13	17	32	28	.80	-
Level 3	0% - 6%	7	8	38	37	.08	-

Level 1: Two sentences or less
Level 2: More than two sentences
Level 3: Teacher performs act

TABLE 23

A Comparison of Males and Females in the Top 25% and Bottom 25% of Their Classes on Overall Rate of Teacher-Child Interaction

	Top 25%		Remaining Children			
	F	M	F	M	X^2	P
Class Rank:	7	24	49	42	11.89	.001
	Bottom 25%					
	F	M				
Class Rank:	16	15	40	51	.54	-

TABLE 24

Percentage of Time Spent Misbehaving According to Class Rank and Sex

	Above Median		Median & Below			
Top 25%	Top	Other	Top	Other	X^2	P
All	24	35	7	56	14.05	.001
Females	1.5	11.5	5.5	37.5	.01	-
Males	22.5	22.5	1.5	19.5	11.36	.001
Bottom 25%						
All	11	48	20	43	2.76	.10
Females	3	10	13	30	.25	-
Males	8	37	7	14	1.98	-

TABLE 25

Differences Between High-Attention-Receivers (Top 25%) and Other Children

	Above Median		Median & Below			
	Top	Other	Top	Other	X^2	P
Rate per hour of Teacher Initiation During Misbehavior	11	39	16	35	1.13	-
Teacher Initiations During Misbehavior: Percentage Behavior Correction	16	44	14	34	.08	-
Rate per hour of Teacher Initiation During Cooperation	27	31	4	60	26.07	.001
Rate per hour of Child Initiation	28	30	3	61	30.50	.001
Content of Child Initiation (rate per hour)						
Seeks Attention	29	29	2	62	35.23	.001
Avoidance	10	13	21	78	12.28	.001
Seeks Help	19	39	12	52	3.15	.10
Seeks Materials	24	34	7	57	14.88	.001
Gain Information	24	34	7	57	14.88	.001
Prosocial	19	39	12	52	3.15	.10

TABLE 25
(Continued)

	Above Median		Median & Below			
	Top	Other	Top	Other	X^2	P
Percentage of Child Initiations:						
Minimal (Statements)	18	40	13	51	1.84	-
Moderate (Questions)	17	41	14	50	.89	-
Active (Request Action)	12	46	18	46	.89	-
Percentage of Child Initiations:						
Extra attention getting behaviors used	15	43	16	48	.02	-
Content of Teacher Response Overall (rate per hour)						
Procedural	29	29	2	62	35.27	.001
Competence	24	34	7	57	17.97	.001
Helping	18	40	13	51	1.84	-
Personal	25	33	6	58	18.26	.001
Praise	19	39	12	52	3.15	.10
Behavior Correction	22	36	9	55	9.15	.005

TABLE 26

Sex Differences in Behavior: High-Attention-Receivers (Top 25%)

	Above Median*		Median & Below			
	F	M	F	M	X^2 **	P
Percentage of Time Spent Misbehaving	1.5	22.5	5.5	1.5	12.21	.001
Rate per hour of Teacher Initiations During Misbehavior	2	9	5	15	.00	-
Rate per hour of Teacher Initiations During Cooperation	6	21	1	3	.13	-
Rate per hour of Child Initiations Overall	7	21	0	3	.03	-
Percentage Initiations with Extra Attention Getting Behaviors	5	10	2	14	.92	-
Child Initiates (rate per hour)						
Seeks Attention	6	23	1	1	.01	-
Avoidance	2	8	5	16	.04	-
Seeks Help	4	15	3	19	1.97	-
Seeks Materials	6	18	1	6	.00	-
Gain Information	5	19	2	5	.00	-
Prosocial	3	16	4	8	.50	-

*Comparisons are based on the median established for all children in each class, not the median of only those in the top 25%.
**Yates correction for small frequencies was used.

TABLE 26
(Continued)

	Above Median		Median & Below			
	F	M	F	M	X^2	P
Level of Attention Sought						
Percent Minimal	2	16	5	8	1.83	-
Percent Moderate	5	12	2	12	.34	-
Percent Active	6	6	1	18	8.42	.005
Content of Teacher Response Received Overall (rate per hour)						
Procedural	6	23	1	1	.01	-
Competence	6	23	1	1	.01	-
Helping	6	12	1	12	1.59	-
Personal	4	20	3	4	.92	-
Praise	6	13	1	11	1.16	-
Behavior Correction	5	17	2	7	.18	-

TABLE 27

Sex Difference in Behavior:
Children Who Were Not High-Attention Receivers

	Above Median*		Median & Below			
	F	M	F	M	X^2	P
Percentage of Time Spent Misbehaving	11.5	22.5	37.5	19.5	8.76	.005
Rate per hour of Teacher Initiations During Misbehavior	24	23	27	21	.47	-
Rate per hour of Teacher Initiations During Cooperation	13	18	36	24	2.68	-
Rate per hour of Child Initiation	17	13	32	29	.01	-
Level of Attention Sought						
Percent Minimal	22	18	27	24	.04	-
Percent Moderate	23	18	26	24	.15	-
Percent Active	21	25	28	17	2.51	-
Content of Teacher Response Received Overall (rate per hour)						
Procedural	16	13	33	29	.00	-
Competence	17	17	32	25	.32	-
Helping	22	11	27	31	3.42	.10
Personal	20	13	29	29	.03	-
Praise	25	14	24	28	2.88	.10
Behavior Correction	15	21	34	21	3.56	.10

*Comparisons are based on the median established for all children in each class, not the median of only those in the remaining 75%.

TABLE 27
(Continued)

	Above Median		Median & Below			
	F	M	F	M	X^2	P
Child Initiates (rate per hour)						
Seeks Attention	19	10	30	32	2.33	-
Avoidance	4	8	45	34	2.18	-
Seeks Help	25	13	24	29	3.74	-
Gain Information	20	14	29	28	.54	-
Seeks Materials	19	15	30	27	.09	-
Prosocial	21	18	28	24	.00	-

TABLE 28

Comparison of the Sex Distribution
of Each Attitude Group with the Remaining Sample

	Attitude Group		Other Children			
	F	M	F	M	X^2	P
Attachment Children	14	7	42	59	4.40	.05
Rejection Children	3	14	53	52	6.05	.025
Indifference Children	11	8	45	58	1.30	-

TABLE 29

Members of Each Attitude Group Who Were Also High-Attention-Receivers (Top 25%)

	Attitude Group		Other Children			
	N in Top 25%	N Not in Top 25%	N in Top 25%	N Not in Top 25%	X^2	P
Attachment Children	5	16	26	75	.03	-
Rejection Children	11	6	20	85	16.09	.001
Indiffernce Children	2	17	29	74	2.63	-

TABLE 30

Attitude Groups Compared with Other Children on Teacher Initiations During Misbehavior and Cooperation

Percentage of Time Misbehaving	Attitude Group: Above Median	Attitude Group: Median & Below	Other Children: Above Median	Other Children: Median & Below	X^2	P
Attachment Children	7	14	51	50	2.05	-
Rejection Children	16	1	42	63	17.18	.001
Indifference Children	5	14	53	50	4.07	.05
Rate per hour of Teacher Initiation During Misbehavior						
Attachment Children	5	13	45	38	4.14	.05
Rejection Children	9	8	41	43	.10	-
Indifference Children	8	6	42	45	.38	-
Rate per hour of Teacher Initiation During Cooperation						
Attachment Children	7	14	51	50	2.06	-
Rejection Children	15	2	43	62	13.12	.001
Indifference Children	5	14	53	60	4.07	.05

TABLE 30
(Continued)

Rate per hour of Behavior Correction During Misbehavior	Attitude Group		Other Children		X^2	P
	Above Median	Median & Below	Above Median	Median & Below		
Attachment Children	11	9	49	31	.26	-
Rejection Children	10	7	50	33	.01	-
Indifference Children	8	6	52	34	.06	-

TABLE 31

Attitude Groups Compared with Other Children on Rate of Child Initiation

Rate per hour of Child Initiation: Overall	Attitude Group		Other Children		X^2	P
	Above Median	Median & Below	Above Median	Median & Below		
Attachment Children	8	13	50	51	.90	-
Rejection Children	14	3	44	61	9.60	.005
Indifference Children	4	15	54	49	6.33	.025
Child Seeks Attention						
Attachment Children	10	11	48	53	.00	-
Rejection Children	14	3	44	61	9.60	.005
Indifference Children	3	16	55	48	9.10	.005
Child Seeks Help						
Attachment Children	10	11	48	53	.00	-
Rejection Children	9	8	49	56	.23	-
Indifference Children	6	13	52	51	2.30	-
Child Seeks Information						
Attachment Children	7	14	51	50	2.06	-
Rejection Children	14	3	44	61	9.60	.005
Indifference Children	7	12	51	52	1.03	-

TABLE 31
(Continued)

Rate per hour of Child Initiation: Prosocial	Attitude Group: Above Median	Attitude Group: Median & Below	Other Children: Above Median	Other Children: Median & Below	X^2	P
Attachment Children	11	10	47	54	.23	-
Rejection Children	11	6	47	58	2.33	-
Indifference Children	4	15	54	49	6.33	.025
Percentage of Time Extra Attention Getting Behaviors Were Used						
Attachment Children	13	8	45	56	2.10	-
Rejection Children	10	7	48	57	.81	-
Indifference Children	7	12	51	52	1.03	-

TABLE 32

Attitude Groups Compared with Other Children on Overall Rate of Teacher Response Received

	Attitude Group		Other Children			
Procedural	Above Median	Median & Below	Above Median	Median & Below	X^2	P
Attachment Children	8	13	50	51	.90	-
Rejection Children	12	5	46	59	4.21	.05
Indifference Children	3	16	55	48	9.10	.005
Competence						
Attachment Children	12	9	46	55	.93	-
Rejection Children	11	6	47	58	2.33	-
Indifference Children	7	12	51	52	1.03	-
Helping						
Attachment Children	7	14	51	50	2.06	-
Rejection Children	6	11	52	53	1.86	-
Indifference Children	10	9	48	55	.23	-
Personal						
Attachment Children	11	10	47	54	.23	-
Rejection Children	11	6	47	58	2.33	-
Indifference Children	5	14	53	60	4.07	.05

TABLE 33

Attitude Groups Compared with Other Children
on Overall Rate of Behavior Correction and Praise Received

	Attitude Group		Other Children			
Behavior Correction	Above Median	Median & Below	Above Median	Median & Below	X^2	P
Attachement Children	7	14	51	50	2.06	-
Rejection Children	15	2	43	62	4.07	.05
Indifference Children	9	10	49	54	.00	-
Praise						
Attachment Children	9	12	47	52	.09	-
Rejection Children	8	9	48	53	.01	-
Indifference Children	12	7	46	57	2.20	-
Praise - Procedural						
Attachment Children	5	16	35	66	.93	-
Rejection Children	7	11	30	71	.36	-
Indifference Children	8	11	32	71	.88	-
Praise - Competence						
Attachment Children	7	14	52	49	2.29	-
Rejection Children	6	11	53	52	1.36	-
Indifference Children	14	5	45	58	5.78	.025

TABLE 33
(Continued)

Praise - Helping	Attitude Group: Above Median	Attitude Group: Median & Below	Other Children: Above Median	Other Children: Median & Below	X^2	P
Attachment Children	1	20	13	88	1.13	-
Rejection Children	0	17	14	91	2.56	-
Indifference Children	2	17	12	91	.02	-
Praise - Personal						
Attachment Children	9	12	47	54	.09	-
Rejection Children	8	9	48	57	.01	-
Indifference Children	10	9	46	57	.41	-

TABLE 34

Attitude Groups: Females and Males Compared

Percentage of Time Misbehaving	Females		Males		X^2 *	P
	Above Median	Median & Below	Above Median	Median & Below		
Attachment Children	5	9	2	5	.01	-
Rejection Children	2	1	14	0	.04	-
Indifference Children	1	10	4	4	3.66	.10
Teacher Initiations During Misbehavior: Percent Behavior Correction						
Attachment Children	9	5	2	5	1.81	-
Rejection Children	3	0	7	7	.23	-
Indifference Children	2	9	5	3	2.31	-
Rate per hour of Teacher Initiation During Cooperation						
Attachment Children	5	9	2	5	.01	-
Rejection Children	1	2	14	0	.21	-
Indifference Children	2	9	3	5	.19	-

*Yates correction for small frequencies was used.

TABLE 34
(Continued)

Rate per hour of Child Initiation	Females		Males		X^2	P
	Above Median	Median & Below	Above Median	Median & Below		
Attachment Children	8	6	0	7	3.29	.10
Rejection Children	2	1	12	2	.00	-
Indifference Children	1	10	3	5	.93	-

TABLE 35

Attitude Groups: Females and Males Compared on Help

Rate per hour: Child Seeks Help	Females		Males		X^{2*}	P
	Above Median	Median & Below	Above Median	Median & Below		
Attachment Children	8	6	2	5	.63	-
Rejection Children	0	3	9	5	2.02	-

	Attachment		Rejection		X^{2}	P
	Above Median	Median & Below	Above Median	Median & Below		
Females	8	6	0	3	1.43	-
Males	2	5	9	5	1.22	-

*Yates correction for small frequencies was used.

TABLE 35
(Continued)

Overall Rate per hour of Teacher Helping	Females		Males		X^2	P
	Above Median	Median & Below	Above Median	Median & Below		
Attachment Children	6	8	1	6	.70	-
Rejection Children	0	3	6	8	.61	-

	Attachment		Rejection		X^2	P
	Above Median	Median & Below	Above Median	Median & Below		
Females	6	8	0	3	.61	-
Males	1	6	6	8	.70	-

TABLE 36

Attitude Groups: Males and Females Compared on Seeks Information

Rate per hour of Child Seeks Information	Females		Males		X^2 *	P
	Above Median	Median & Below	Above Median	Median & Below		
Attachment Children	6	8	1	6	.70	-
Rejection Children	2	1	12	2	.00	-

	Attachment		Rejection		X^2	P
	Above Median	Median & Below	Above Median	Median & Below		
Females	6	8	2	1	.02	-
Males	1	6	12	2	7.41	.01

*Yates correction for small frequencies was used.

TABLE 37

Attitude Groups: Males and Females
Compared on Competence Encouragement

Overall Rate per hour of Teacher Competence Encouragement	Females		Males		X^{2*}	P
	Above Median	Median & Below	Above Median	Median & Below		
Attachment Children	8	6	4	3	.00	-
Rejection Children	1	2	10	4	.38	-

	Attachment		Rejection		X^{2}	P
	Above Median	Median & Below	Above Median	Median & Below		
Females	8	6	1	2	.02	-
Males	4	3	10	4	.18	-

*Yates correction for small frequencies was used.

TABLE 37
(Continued)

Rate per hour of Praise Combined with Competence Encouragement	Females		Males		X^2	P
	Above Median	Median & Below	Above Median	Median & Below		
Attachment Children	8	6	1	6	2.02	-
Rejection Children	0	3	6	8	.61	-

	Attachment		Rejection		X^2	P
	Above Median	Median & Below	Above Median	Median & Below		
Females	6	8	0	3	.61	-
Males	1	6	6	8	.70	-